SIGNS, COMMUNICATION AND UNDERSTANDING

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PH D THESIS: 1980

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If on the other hand I tell you that to let no day pass without discussing goodness and all the other subjects about which you hear me talking and examining both myself and others is really the very best thing that a man can do, and that life without this sort of examination is not worth living, you will be even less inclined to believe me. Nevertheless that is how it is, gentlemen, as I maintain; though it is not easy to convince you of it.

- Plato 'The Apology'

Anybody can make a mistake, and the more he thinks about a thing, the more mistakes he's bound to make.

- The Good Soldier Schweik

That one person can increase another's understanding of something by way of symbolic communication seems an uncontentious claim. More contentious is the claim that much epistemology and philosophy of language, whilst giving us formal expositions of the truth criteria for 'X knows that S' or the syntactic structure of language, fails to cast much light on the process of knowing, on what being an 'understander' consists in.

I begin my thesis by looking at language acquisition, rejecting behaviourist/physicalist accounts and concluding that we must talk about the conceptual development of the pre-linguistic child (involving coming to pick out and attach significance to certain classes of objects of experience) if language acquisition is to be shown to be a possibility. Failure to divorce concept possession from the possession of sophisticated linguistic skills, I argue, makes language acquisition inexplicable. I accept that language frequently plays an important part in establishing interpersonal agreement in conceptual frameworks/ways of looking, but not that talk of concept possession in the absence of linguistic skills is empty.

This leads on to the problem of meaning and I adopt a 'speech acts' approach to this on the grounds that a Davidsonian theory of meaning cannot claim to explain how linguistic signs are significant for us unless backed up by behaviourist/physicalist claims of the sort Quine makes and which I reject. I look at the meaning of symbols in terms of the significance it has by virtue of agreement (within a form of life) on the appropriateness of their inscriptions for performing certain speech acts in certain contexts.

I next move on to an account of understanding, analysed in terms of the possession of a conceptual framework appropriate for the object of understanding. I reject both relativist and strongly absolutist accounts of this 'appropriate' concluding that we can only support a claim that 'this' or 'that' ways of looking captures 'these' aspects of the world if theory has implications, directly or indirectly, for our handling of relevant aspects of the world. Utility is not written into understanding itself, rather it appears as the criterion by which we can support the claim that a particular 'story' about the world captures the way things are to some extent as opposed to being mere phantasy. In the course of this discussion I distinguish a number of problem domains in which specialists have found it appropriate to make different metaphysical assumptions about the phenomena with which we are dealing.

The thesis concludes by relating the issues discussed to both curriculum design and the problems of teaching.

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Introduction.

When a teacher teaches he often produces vocal noises and makes little 'squiggles' on a blackboard or on paper. Such activities are aimed at producing some effect in his audience, his pupils. This is a crude description, embodying many unexamined presuppositions, of something done by everyone who teaches. It raises, crudely, a number of basic problems. These are:-

(i) The status of the pupil (and the teacher) i.e. the question of what sort of description we should see the pupil under.

(ii) The status of the 'noises' and 'squiggles' made by the teacher - are they stimuli which achieve their effect via mechanistic causality or are they conventionally defined 'speech acts' or what?

(iii) The specification, in the light of the discussion of (i) and (ii) and of other relevant issues, of the 'effect' a teacher's activities should be aimed at achieving.

Various solutions to these problems have been offered which carry very different implications for teachers' activities and attitudes. A behaviourist 'solution' to the first implies that we should regard our pupils as responding organisms and suggests that the central element in any teacher's job is that of behaviour modification. The teacher, on this view, must first decide on what overt behaviour he wants his pupils to produce (which can be anything from good manners to the ability to balance chemical equations) and then must plan schedules of reinforcement i.e. provide stimuli of a sort that will operantly condition his pupils so that they will produce the relevant behaviour in appropriate contexts. The behaviourist approach is highly suspect and is generally taken to rest on an incoherent theoretical basis. The central problem with such accounts seems to be

that in the absence of reference to the 'responding organism's' inner states the notions of stimuli and response become fatally problematic.

This fact, however, doesn't deter some philosophers from adopting a behaviourist approach. Quine, for example, regards a behaviourist position as tenable given the added assumption that the responding organism is to be regarded as a stimulus-response 'machine'. For Quine the stimulus-response link is one of mechanistic cause and effect, the precise description of the mechanisms involved being a job for physiologists. In his article 'Mind and Verbal Dispositions' (in 'Mind and Language ed:Guttenplan) he writes (P,87):

> "In all we may distinguish three levels of purported explanation, three degrees of depth: the mental, the behavioural, and the physiological. The mental is the most superficial of these, scarcely deserving the name of explanation, The physiological is the deepest and most ambitious, and it is the place for causal explanations. The behavioural level, in between, is what we must settle for in our descriptions of language, in our formulations of language rules, and in our explanations of semantical terms."

So Quine's solutions to my three problems are (crudely):-

(i) Pupils are conditionable physiological mechanisms.

(ii) Linguistic utterances are causally effective stimuli (in the same sense of 'cause' used by physicists).

(iii) The effect of a teacher's utterances (etc.) should be to condition his pupil into 'correct' modes of behaviour.

There are those, however, (and I am with them) who regard this sort of physicalist reductionism as highly suspect. If physics, dealing with phenomena of the same general type as a moving billiard ball causing a stationary one to move by striking it, has no use for mentalistic concepts such as consciousness, intention etc., then all is well and good. But to assume that there is nothing about human beings that requires us to be described as

conscious agents seems unjustified especially given the fact that the physiological account which should (if Quine and other physicalists are right) replace our mentalistic accounts of people simply doesn't exist.

It seems to me, and to many others, that people are conscious, at least in the sense of being perceptually aware of an external reality as opposed to neurological impulses, are agents and do have complex mental lives at both the cognitive and affective levels. Quine's faith that one day a physiological account will replace such mentalistic talk is, as things stand, nothing more than faith and as such his reductionist programme is not at all compelling. If we take mentalistic talk as meaningful in more than a poetic or mythological way (which is how Dennet characterises it in his book 'Content and Consciousness') we must reject Quine's solutions to my basic problems and approach our pupils not as 'conditionable physiological mechanisms' but as conscious agents who need to be helped to understand the world better in order to act on it more efficiently.

Such an approach, which I adopt in this thesis, leads away from seeing linguistic utterances as causally effective (mechanistic sense) stimuli and towards looking at language in terms of speech acts, utterances gaining their appropriateness for doing 'this' in 'this' context through interpersonal agreement within a form of life. This approach, found most notably in the work of Austin and Searle and the later work of Wittgenstein is not without its opponents. The work of Davidson and his followers, designed to give the meaning of statements in terms of a meta-linguistic description (in purely extensional terms) of their truth conditions attempts to discard any reference to utterer's intent. This move opposes the 'speech acts' approach in which an utterer's intent is seen as central to the meaning of his utterance.

It might be the case that the apparent opposition here is illusory, the result of an ambiguity in the notion of a theory of meaning. A Davidsonian theory, it

might be suggested, is concerned with exhibiting the meaning of statements in natural languages unambiguously by translating them into a rigorously defined meta-language. The 'speech acts' approach, on the other hand, might be said to be more concerned with explaining the rôle of language in life, with explaining our ability to understand one anothers' linguistic utterances. It remains the case, however that the Davidsonian approach has been claimed to be an explanation of our linguistic abilities.

Davidson himself currently seems rather reluctant to make this claim but Quine, as we have seen, makes it on the basis of the further claim that our (behavioural) tendency to produce linguistic utterances which accord, or which will be shown to accord, with a Davidsonian theory constitutes knowledge of such a theory, any further explanation of our possession of such 'knowledge' being a matter for physiological description of the relevant brain circuitry.

Again here we have an issue of educational importance for the adoption of a Davidsonian position on language seems to reduce any talk of concept possession to talk of linguistic dispositions. The implication of this is that a child who cannot explain what he should know or understand (assuming that other factors like nervousness etc. are absent) simply doesn't know or understand it. Against this we can point out people whose success in some endeavour, for instance, interpreting Beethoven on the piano, demonstrates their understanding whilst what they say about what they do is just too vague to give anyone an idea of how it's done. We can also point out those individuals who talk well but seem practically useless. Such considerations must, I suggest, lead us to regard any attempt to analyse understanding in terms only of linguistic dispositions as woefully inadequate.

My third basic problem leads to two areas of debate.

The first is the characterisation of understanding, the second is the question of whether or nor the fundamental aim of education should be that of propagating understanding or whether other aims should be given priority.

The debate on understanding comes down to the familiar argument between relativists and absolutists (though this distinction is not entirely clear, there are many shades of opinion between the extremes). The older view is that of the absolutists who claim that true understanding is of 'things-in-themselves', an absolutely true grasp of how things are in an independent (of us) universe. The problems here are well known. We normally make knowledge claims like, "It's raining outside," or, "The earth is one planet amongst many," on the basis of evidence which falls far short of giving us absolute certainty. Thus Plato was led to conclude that true knowledge is of a transcendental 'world' of forms, not of the world of everyday experience. The central problem for absolutists is that of showing how we can have any knowledge at all, which comes down to specifying criteria for absolute truth, criteria which, when fulfilled, guarantee that we have absolutely certain knowledge. This just hasn't been done and since the sciences seem to provide us with accounts of the world which, though not incorrigible, seem properly describable as knowledge, many people have come to regard absolutism as uncompelling.

The (extreme) relativists, seeing the difficulty of demonstrating that any statement is true of the world, have tended to say that truth is a semantic property of sentences. Under such a view, and I must stress that I am constructing an extreme version of the relativist thesis, the truth of statements is determined not by reference to the nature of the world, but by interpersonally arrived at convention within a form of life. This makes truth a cultural variable which is the weakness of the relativist position.

If our understanding is of a world independent of us, then understanding that world must be a matter of seeing (to some degree, though not necessarily completely) how things are in it. So if I understand the nature of soil and climate in terms of their suitability for growing various crops, that understanding should, it seems reasonable to assert, issue in my possessing the ability to choose crops for a particular location which will grow there successfully. If this condition was not fulfilled, and if I had a great knowledge of something called agricultural theory, then we would surely say that either I had not adequately understood the theory (if others who knew the theory could choose appropriate crops for different farming conditions) or else that the theory I had learned was inadequate, did not provide the information which would have given me the appropriate understanding. The point is that understanding is always of something and the question of whether I understand that thing is, in cases where the object of understanding is not entirely defined by convention, to do with my seeing how it is, not merely with the question of whether what I say about it is appraised as true within my home culture. Relativism makes truth entirely a matter of <u>interpersonal</u> agreement, it misses out reference to the nature of the object of understanding and our grasp of that nature.

This debate between absolutism and relativism is still very much alive in the philosophy of science, the best known names being those of Feyerabend (relativism) and Popper (a modified absolutism which concedes the impossibility of demonstrating absolute truth but claims that we can nevertheless represent changes in paradigm in the sciences as getting closer and closer to how things really are). Work on the nature of paradigms and of the rôle of problems in the evolution of the sciences seems to offer a way of comparatively evaluating different paradigms, of giving rational criteria for deciding which of two paradigms gives us the best model of relevant aspects of the world. Focussing on problems and on the

different sorts of problems which specialist enquiry has separated out gives a way, I believe, of distinguishing different problem domains, domains in which researchers have found it appropriate to make different metaphysical assumptions about the nature of the phenomena they have attempted to explain.

The importance for education of elucidating the relations between the world, human interests and human understanding is crucial. An extreme absolutist would have to assert that calls for what is taught in schools to be socially or economically relevant are to be heeded only insofar as the inculcation of true understanding is not frustrated by heeding them. This has the virtue of asserting the importance of understanding, but the absolutists have a tendency to emphasise pure knowledge as opposed to practical skills and this tendency seems unjustifiable given the weakness of the absolutist position. The relativists, on the other hand, seem to leave understanding out of this story to a large extent and seem to equate education with learning to say what 'one' normally says when confronted with situations of 'this' sort within 'this' form of life. Insofar as many aspects of the world we live in and have to deal with in life are socially invariant relativism seems to give an inadequate characterisation of what education is about.

This brings us to the last question arising from my third problem - what should the 'effect' be that teachers attempt to achieve with respect to their pupils. An absolutist answer seems to be something like, "An understanding of how things really are, sub specie aeternitatis," but since we have no criteria for absolute truth we simply don't know what to teach in order to achieve this so it's a poor answer. A relativist reply would seem to come down to something like "The pupil must be socialised into the ways of looking/language games operant in his own culture," but this seems inadequate as surely we don't

want pupils merely to fit in with the beliefs generally held within their home culture, surely we want them to examine their beliefs critically against their experiences of the world. A more balanced view seems to be that pupils should be taught the best theoretical perspectives we have (and which it is possible to teach) on various important aspects of the world. This gives priority to the propagation of the best understanding we have whilst allowing that the importance of different areas of knowledge/modes of understanding is to be established not transcendentally but through their relations with human life and (hence) the social context in which the education takes place.

In this thesis there is much discussion of general philosophical problems which have implications for wider issues than the educational. I make no excuse for this, many of the central problems of education are restricted versions of more general problems. If we are to solve the problems of education by doing philosophy of education we cannot duck these problems, to do this would simply be to abrogate our responsibility, to fail to engage properly with the task we have taken on. I trust my efforts here will, if not solve my three basic problems, indicate a fruitful approach to them.

The Pre-linguistic Child - Initial Discussion.

In their monograph, 'The development in social attachments in infancy,' (Monographs of the Society for Research in Child Development vol.29 No.23 pub. 1964) Schaffer and Emerson carried out a follow up survey on sixty carefully selected children from the Glasgow area. The children came from a variety of home backgrounds, lived at home with their parents, were born full term (ie. not premature births), showed no signs of congenital abnormality, had no illnesses or periods of hospitalisation prior to the study's commencement and were, according to standard tests, normally developed for their age (one child being disqualified retrospectively from the study group on failing to reach the pre-decided standards on the tests). The infants were tested in their own homes and the study commenced when the children were at ages varying from 5 to 25 weeks.

A variety of tests were used in sequence to investigate three things: (i) attachment to specific persons, (ii) attachment to the mother and (iii) fear of strangers. I will not go into details of experimental procedure as I do not want to make use of the detailed findings of Schaffer and Emerson's work. The following table gives the number of children who showed signs of being attached to specific persons, being attached to their mothers and fearing strangers at the indicated stages of the study.

Age in Weeks.	attachment to specific persons.	mothers.	fear of strangers
21-24	4	3	0
25-28	15	13	10
29-32	17	18	15
33-36	7	18	19
37-40	7	8	7
41-44	4	4	4
45-48	3	3	2
49-52	1	1	0
53-78	2	2	3

These figures show that the vast majority of the children were assessed as exhibiting the attachments and aversion being investigated by the end of their first year of life, with over half of them reaching this stage by the thirty-sixth week after birth.

From the philosophical point of view such findings are questionable in one very important way. The problem is that of justifying a description of the behaviour of pre-linguistic children in such terms as, 'being attached to their mothers' (attached in an emotional sense) or, 'being afraid of strangers.' In the case of attachment Schaffer and Emerson overcame this problem by defining it operationally as "...the tendency of the young to seek the proximity of certain other members of the species." Their procedure for ascribing fear of strangers seems to suggest that it too was defined operationally as a tendency to exhibit aversion behaviour on the approach of someone (ie. either Schaffer or Emerson) the child didn't know (who had minimal contact with the child). Such moves don't get rid of of philosophical problems of course. The problems of how we should characterise the behaviour of young children, what sort of concepts we can properly use in describing such behaviour, is philosophical. And it is this problem that this first part of my thesis is designed to deal with.

But Schaffer and Emerson's work does show one thing beyond question: that pre-linguistic children do come to

react to the actions of those people with whom they have had close contact, particularly their mothers, in a way that is demonstrably different to the way they react to the actions of people with whom they have had very little contact. By the end of the thirty-sixth week forty four of the children in the sixty strong study group were showing signs of distress when the researcher approached them (even though the researcher attempted to talk and smile in a reassuring manner) and offered to pick the child up (ie, hands held out). This is the only fact I wish to draw from this research: that pre-linguistic children do come to react differently to different people. More precisely, I am interested in the fact that children react in a special way towards their mothers. As Schaffer and Emerson put it (in their introduction)

"It is well established that, from about the second or third month on, an infant will behave differently with his mother as compared to strangers. He may smile and vocalize at her more readily, he may visually follow her more than he would other people, and he is likely to quieten sooner when picked up by her after crying. Perceptual discrimination has thus taken place: the infant is now able to recognise his mother."

My task is to look into the question of how it is possible for a pre-linguistic child to react in one way to its mother (someone it knows) and in a different way to someone it has never met before. It seems clear to me that this could not happen unless the child can recognise its mother as an object with special significance. I say this so as not to ascribe too great a conceptual repertoire to the child. If the child did not recognise familiar objects then there could be no reason for it to react differently to two different people. Each time its mother approached her child she would constitute, for the child, a new object of experience, an object with exactly the same status as a stranger. But the child does react in a special way to its mother's proximity, and it seems to me

that this fact presupposes that the child recognises its mother.

The difficulty which some philosophers have in accepting an account of this sort that I have given here arises, I believe, from their own reliance on a mode of conceptual analysis that makes everything language dependent. Such a philosopher would insist that recognition involves recognising as something, and would want to know what it is that a baby recognises its mother as, implicitly expecting a reply in terms of a linguistic description which, by definition, the pre-linguistic child could not give. My contention is that such philosophers are resting their case on an account which makes concepts wholly language dependent, a move which puts the acquisition of language outside of their conceptual schema. Under such a way of thinking anything that occurs independently of language use can only be a matter of mechanistic reaction to stimuli. Thus, from this point of view, I am safe for as long as I talk about the pre-linguistic child's discriminatory reactions, but in trouble as soon as I talk about such reactions as presupposing the ability to recognise what is familiar, what has been come across before.

I think that the source of this disquiet is Wittgenstein's dictum (or the dictum often ascribed to Wittgenstein. I don't want to get bogged down in the morass of exegesis that surrounds Philosophical Investigations and his other writings) that, in principle, any judgement stands in need of support via public criteria. As the use of public criteria is often seen as involving the use of language, this dictum is taken to say in effect, that it is empty to talk of judgements being made in the absence of language. But it seems to me that to accept this point is to make language acquisition an almost magical event. The pre-linguistic child can only react to stimuli, the language user can make judgements,

the transition from one state to the other under this view becomes a change in logical status. I cannot see how this can be the case, indeed I wish most strongly to argue that it cannot be the case.

Urmson, in his paper 'Recognition,' (Proc. Aristotelian Soc. 1955-6) carries out a conceptual analysis of recognition that makes a case for the thesis that recognition is very language dependent. But even he has doubts about denying that pre-linguistic children can recognise their mothers. He makes the point that although we can recognise someone by their characteristics we don't normally do this, which is to say that although I know that R.T., one of my pupils, has certain characteristics, I don't ever go through a check list before I say, "Hello, Rosalin" to her in the morning. He further makes the point that recalling an earlier meeting is no part of recognition, it is no contradiction to say on seeing someone, "I know him, but I don't know where from." Urmson writes, "A very small child may recognise its mother as an individual (though not as a mother). It will be put off or deceived by no substitute." At the end of his paper he writes, "I have argued that to recognise as an X involves following logical rules determining what is an X; to recognise something as an individual is certainly a sophisticated and difficult case of recognising as an X and is not pre-verbal. But that does not prevent recognition of an individual from being pre-verbal." This rather paradoxical assertion is, I suggest symptomatic of the plight of the language bound conceptual analyst. It is a plight which arises from seeing concepts as wholly linguistic entities and it results in making pre-linguistic recognition a seemingly self contradictory notion.

To get away from these difficulties I will simply observe that even to react in a special way to a particular individual, its mother, a pre-linguistic child's perception of the world must be organised to quite

a high degree. To react to the appearance of any object in its visual field it must be able to distinguish object from ground. Or at least it must be able to distinguish between ground and ground-plus-object. This is not an important qualification, all that is important is that the child must be able to distinguish between various features of what he perceives and direct his attention to something newly arrived in his field of vision.

Further, there must be some reason why a baby reacts to the appearance of a particular object in a special way, it may be that it associates 'this' object, its mother, with the satisfaction of hunger, or with warmth. But to do this the baby must associate in some way the object with the events involving that object. In the same way, in order to begin to attach significance to the noises which are its mother's linguistic utterances the baby must somehow link its aural and visual sensations, otherwise there would be no reason for it to begin to make language like noises. Unless the child begins to associate the sound its mother makes when she says, "Teddy" with the object she introduces into its field of vision, there is no reason why it should ever learn to use the word 'Teddy' in reference to its teddy bear. Thus the facts about the child's reactions at the pre-linguistic level and the facts about the way children begin to learn to use language presupposes a great deal about the pre-linguistic child's perceptual organisation, whether or not we allow talk of such children recognising their mothers. And I think that this fact is what will finally show that the language-bound notion of concepts and concept application, that is, (intentionally or not) a part of Wittgenstein's legacy, to be incorrect.

In talking of perception and recognition here I am using these words in a mentalistic sense. My wish is to argue that the pre-linguistic reactions to environment

must be characterised in terms that make it logically necessary to talk about pre-linguistic concepts. But against such a view are those who take a behaviourist stand on the question of how to characterise human behaviour. And also against any attempt to argue that mentalistic concepts are in any way necessary for an adequate characterisation of human activity are those who take a mechanistic view of mind. Thus, before I go on with my discussion of the pre-linguistic child I must look at the objections raised by the mechanistic/behaviourist school of thought.

Stimulus/Response Explanations. (of the reactions of the pre-linguistic child.)

In the previous section I claimed that the facts about the ways in which pre-linguistic children react to their environment presupposes a certain amount of perceptual organisation. In opposition to this some philosophers and psychologists would claim that there was nothing involved in the ways a child reacts to its environment that requires us to talk about anything more than stmulus/response mechanisms. I think that such an assertion is wrong. The whole point of my wanting to use the notion of recognition in my account of the pre-linguistic child is that recognition implies awareness and accordance with a logically arbitrary system of classification. And classification of things in accordance with logically arbitrary principles is precisely what I take to be meant by concept application. Now there are those who would claim that I am wrong about this, and it is clear that I will have to argue against them later. But the claim that I must first discuss is that there is no need to talk in terms of a pre-linguistic child recognising anything at all, that all the pre-linguistic child's reactions can be explained mechanistically in terms of a stimulus response model.

The proponent of the stimulus/response model here must be saying that the pre-linguistic child's behaviour is caused by its sensory input in a mechanistic way. In other words that a particular sort of excitation of the sense organs is processed in a particular way by the child's neuro-circuitry and results in the production of certain movements by the child's body. I, on the other hand, want to say that such an account will not do what it is supposed to do, that the child's ability to react in a special way to particular objects cannot be explained without saying that the child recognises its mother (say).

Recognition, in the way I use the word, is opposed to a stimulus/response account precisely because it involves classification of different objects of which we are perceptually aware as instances of the same thing or of members of the same class of things (the recognition of an individual can be regarded as the recognition of a thing as a member of a class which has only one member). This classification is of 'things' (in a neutral sense) of which we are perceptually aware and this is what suggests that recognition, in this sense, is not explicable in terms of a stimulus/response model. The purpose of this section and the next section (on mechanism) is to establish that the modes of description being discussed are inadequate for the characterisation of human activity, either that of language users or that of pre-linguistic children. My basic case will be that an explanation of human behaviour in terms of reflexes different from the knee-jerk reflex only in complexity, not in kind, is incomplete. In other words I will claim that there is an element in recognition which the approaches under discussion fail to account for and that this element is present in the case of the pre-linguistic child as much as in that of the language user. Initially, however, my argument will be against the behaviourist view that we can ignore any 'inner' component in human behaviour and can get an adequate characterisation of that behaviour from a straightforward stimulus/response model.

The first problem for the stimulus/response model is the difficulty of specifying the stimulus. If the stimulus is taken to be something in the world, for instance a black triangle outlined on a white background, then it is a matter of fact that the stimulation of the sense organs (the eye in this case) will vary depending upon the angle from which the figure is viewed, upon its distance from the viewer and upon the lighting in which it is viewed. Thus, on this account of what the stimulus is, the mechanistically causal effect of the stimulus

upon the nervous system of the stimulee can vary very widely. If, for instance, a rat was operantly conditioned to react in a certain way to circles but not to straight lines and then it was presented with a disc first face-on and then edge-on, under this definition of a stimulus it would first respond and then fail to respond to the same stimulus.

There is also the problem that nothing 'in the world' is a stimulus until after some organism (human, rat) has reacted to it. The behaviourist sees the organism react, assumes that the reaction was caused (in some unspecified sense) by a stimulus and then specifies the stimulus. The model, in practice, doesn't seem to be one which specifies what behaviour will result from an organism's exposure to a particular stimulus. Instead behaviourism seems to be about what sort of stimulus must have caused the behaviour. This appears to be the result of the fact that the stimulus/response link is established statistically rather than by constant conjunction. This is to say that, in the case of many sorts of stimulus, the thing that normally acts as a stimulus doesn't always do so. Well fed rats, for example, tend to go to sleep even if a buzzer signifying the availablity of food does keep on sounding, and this means that the buzzer no longer acts as a stimulus for the feeding response. If a stimulus is that which causes a response the behaviourist's flashing lights and buzzers are things which sometimes act as a stimuli and sometimes don't. Behavioural psychology is left in a state where it can make grandiose statements about relationships between stimuli and responses, can say what sort of things can be used as a stimuli, but can say nothing at all about why a certain thing will sometimes act as a stimulus and sometimes won't. Thus the idea that a stimulus is a 'thing-in-the-world' seems to generate a number of embarrassing problems.

On the other hand it seems odd to say that the stimulus is in the sense organ, or that the stimulus is the initial stimulation, is the initial neuro-electrical 'burst' caused by the impinging of the world upon the organism's sense organs. In some cases we might overcome this oddness. For instance we could say of the knee-jerk reflex that the stimulus is any event that causes certain specifiable neurological events in certain nerves and that the response is the knee-jerk. And in this case we probably could get an adequate specification of those initial neurological events. But in the case of operant conditioning which is the supposedly stimulus/response model that is often offered as a way of explaining animal behaviour, this initial stimulation cannot be specified at all. Going back to my example of a rat that reacts in a particular way to circles, but not to straight lines. Such rats will react to circles of various sizes and colours, viewed under quite varied conditions. The point here is that the rat will react to a circle even though the neuro-electrical activity caused by the image of the circle formed on its retina will vary from trial to trial. And even more surprising results occur in operant conditioning experiments. In his book, "The Physical Background of Perception," Adrian writes

> "A rat, or a man for that matter, can be trained to recognise triangles or triangularity. After learning that it will be rewarded with food if it jumps towards a white card with a black triangle on it, it will adopt a hopeful attitude to a white triangle on a black ground and will jumps towards it rather than a square or a circle, and the triangle may be large or small, filled in or in outline, with its apex pointing upwards or downwards."

I cannot put too much weight on this example as Adrian doesn't give full details of his experimental procedures. Thus it remains an open question whether or not his rats learned not to jump at a particular square and a particular circle. If Adrian did vary his circles and squares in the same wqy that he varied his triangles

then his result shows that an amazing variety of different stimulations of the retina served as the same stimulus. But even if lack of detail makes Adrian unreliable the fact remains that even as small a change as the rat altering the orientation of its head would alter the position of the image on the retina and hence the initial stimulation of the optic nerve. Thus, even when a rat is 'reacting' to a particular 'stimulus' in several trials by, say, depressing a lever, the initial stimulation that is supposed to cause its behaviour (in a mechanistic sense) will not remain constant, this much is empirical fact attested to by a great many physiologists.

This sort of argument is familiar to philosophers of perception. It is a physiological version of the argument from illusion, the argument fundamental to traditional sense data theories. The basic argument is to observe that although we talk about seeing the same physical object on different occasions it is the case that the object rarely presents an identical appearance to us on different occasions. I, for instance, will quite happily identfy my motor cycle from a wide variety of angles and distances and in greatly varying light conditions. The difficulty here is the question of how I can identify greatly differing appearances as being appearances of the same thing. Behaviourist psychologists have insurmountable difficulties in trying to specify what this sort of 'sameness' consists in as long as they refuse to talk in terms of some 'inner' criterion of sameness. Behaviourism stands in need of a theory which explains the making of 'sameness' judgements, whether the explanation is given in mechanistic or mentalistic terms. In a subsequent section I will be dealing with the problem posed by the argument from illusion.

At this point it is necessary to introduce a new notion into the proceedings, that of stimulus generalisation. I will begin with a very simple illustration of what this is. Shenger-Krestovnikova, a pupil of Pavlov's, trained dogs to salivate on seeing a circle drawn on a card. She found that these dogs would also salivate upon seeing an ellipse. She then continued to present circles to the dogs immediately before feeding them whilst presenting ellipses without reinforcement. The dogs stopped salivating when ellipses of a certain eccentricity were presented, but would salivate with ellipses that were more nearly circular. This suggests that what is happening during conditioning is that the animal being conditioned is coming to respond to a range of stimulation. As the stimulation gets nearer to the 'central area' of stimulation caused in initial conditioning the response is stronger, but the animal comes to respond also to similar sorts of stimulation. Thus the stimulus/response link is not between a particular stimulus and response but between a range of stimulation and a range of responses, the nearer the stimulation to the centre of the conditioned range, the stronger the response. This explanation seems plausible in the case of classical conditioning which deals in the sorts of stimulii and responses that might well be specifiable in such terms. But the behaviourists, in their operant conditioning experiments, manage to train experimental animals to discriminate between classes of stimuli which appear to be distinguishable not in terms of the sort of excitation of the nervous system they cause (which is the requirement for a mechanistic stimulus/response model), but rather in terms of logically arbitrary categories of things in the world.

On page 175 of his book, "Introduction to Modern Behaviourism," Howard Rachlin describes an experiment: (S^D denotes the stimulus that is reinforced, S^Δ denotes the stimulus that is not reinforced.)

"As an illustration of the complex discriminations that are possible, consider the following experiment with pigeons. Thousands of photographs were taken of vehicles of various kinds. The pictures were then sorted into two groups, those that contained trucks or parts of trucks, and those that contained only cars. The pictures were shown in random order to the pigeons, but the same picture was never shown twice to the same pigeon. While the pictures were being shown, the pigeons could peck a key. Occasionally a peck would produce some food, but most of the time pecks had no effect. The critical point of the experiment was that for somepigeons pecks were reinforced only if the picture contained a truck or part of a truck. For other pigeons, pecks were only reinforced when the picture contained cars or parts of cars. In other words, for the first group of pigeons, trucks were "S^{D}"s and cars were "S^{Δ}"s; for the other group, conditions were reversed. As far as the experimenters could tell, there was no other difference between the two groups of photographs other than the cars-versus-trucks distinction. The two groups of photographs were equally light, equally colourful, and equally complex. Yet, within a few weeks of daily exposure to the photographs, the pigeons came to peck rapidly when exposed to a picture containing a truck (if that was the S^{D}) or a car (if that was the S^{D}) and slowly or not at all when the picture contained the S^{Δ} vehicle. How was this discrimination made? Possibly each pigeon had its own strategy. Perhaps some counted the axles on the vehicles. Perhaps some recognised the distinctive hoods or fenders of trucks or simply discriminated the size of the vehicle. (Although this could be a simple size discrimination, since some vehicles were close and some far away. It would have to be based on the relative size of the vehicle compared to its surroundings.) The complexity of the discrimination can be appreciated when we realise that with all out modern technology, we are now only on the threshold of our ability to build machines to make equivalent discriminations."

Rachlin's account suggests that there is no way the two sets of stimuli (the photographs) could be distinguished in terms of their having different effects on the pigeons' sense organs in a mechanistic sense. There is not even much plausibility in talking about two ranges of stimulation having distinct central areas but overlapping at the fringes. The only distinction possible, by his own declaration, was between pictures with cars and pictures of trucks. That is to say between pictures with features of one kind and those with features of a different kind. And

to talk of kinds is to talk of classes of things and in the case of cars and trucks, it is, I suggest, necessary to talk of classification according with logically arbitrary principles. In other words we cannot here specify the difference between the pictures except to say that they were pictures of different things. And once we have said that we have moved away from a stimulus/response explanation. For in talking about behaviour being mechanistically caused by the effects of a state of affairs on an organisms nervous system we forfeit the right to distinguish between those states of affairs except in terms of their effects on the nervous system. Thus Rachlin's experiment in presenting us with pigeons making a discrimination that cannot be talked about except in terms of discriminating between objects of different kinds, kinds that are distinct only in under certain logically arbitrary principles of classification, has given us a counter example to the claim that what goes on in operant conditioning experiments can be described in terms of a mechanistic stimulus/response model.

What Rachlin's pigeons did was to acquire the ability to classify objects of perception in terms of logically arbitrary rules, they acquired concepts that enabled them to distinguish between photographs-with-cars and photographs-with-trucks. This is not to say that they acquired our concepts of cars and trucks, but rather that they acquired some concept that enabled them to act in a discriminatory manner. Perhaps they acquired the concepts of thing -that-when-pecked-brings-food and thing -that-when-pecked-doesn't-bring-food. But this is no more than speculation. To attempt to express a pigeons ways of classifying the world in language is to make the mistake of ascribing human or near human concepts to pigeons. This is inadmissable, pigeons don't use language and so we can't discover anything about their 'world view' beyond what we can deduce from our knowledge of what they can learn to do. The central point is that a stimulus/response

story seems unable to come to grips with what the pigeons were doing, the specification of $S^{\square}$ and $S^{\triangle}$ in stimulus/response terms seems impossible. The importance of this is that if we can't give a specification of the stimulation caused (in mechanistic terms) by the photographs that will enable us (again mechanistically) to explain how the pigeons discriminatory responses occur, then we must talk about the pigeons being able to discriminate between objects of perception, being able to recognise truck-photographs as being different from car-photographs.

Now at this point a modern mechanist would probably accept that I have a case against behaviourist psychology. He would accept that what I have said shows the behaviourist attempt to specify stimuli as objects presented to an organism is misguided. He would further admit that, at that present time, the specification of the sort of stimulation (or afferent effect to adopt neurological terminology) that results in a brain producing a certain type of efferent effect, and hence the body responding in a certain way, is not possible. And such a mechanist would therefore say that, Given the present state of human knowledge, we must explain results like Rachlin's in terms of recognition of objects of certain sorts and might even allow me to go on to talk in terms of concept application. But behind this acquiescence would lie a conviction that use of such mentalistic concepts is a second best mode of explanation, a vague way of coming to grips with the facts about the behaviour of human beings and other organisms. A modern mechanist's main claim would be that I have shown nothing more than that our knowledge of the brain is not sufficient for us to be able to give adequate mechanistic explanations of a great deal of animal behaviour. But he would point out that nothing I have said shows that the mechanistic project of wanting to explain all animal behaviour in purely extensional (as opposed to intentional)

terms is, in principle, misguided. The mechanist would maintain his faith that one day the problems which remain for the brain physiologists will be overcome.

He would claim that the logically arbitrary principles accorded with in recognition were nothing more than the ways in which very sophisticated brain circuitry processes afferent impulses to produce efferent impulses. And if he was right about this, then he would be able to concede that we need to talk in terms of the pre-linguistic child recognising its mother without admitting that this leads us to talk in terms of perception of a sort that involves concept application (in a mentalistic sense of the word concept). In other words, a mechanist would be able to say that, given the right sort of advances in the field of brain physiology, it would be possible to give mechanistic accounts of what we mean by apparently mentalistic concepts. This would show that there is nothing in the mentalistic way of characterising mind that is not merely a shorthand way of talking about mechanistic processes.

I happen to believe that, in the case of human beings at least, the mechanistic account must, of logical necessity, give an incomplete picture of the way things are. in my next section I will look at one particular attempt to uphold mechanism. I will try to show its incompleteness and will then go on to argue that this shows that we must use mentalistic concepts in the explanation of the behaviour of language users. I will then argue that if this is so it must be proper to use mentalistic concepts in talking about pre-linguistic children.

The Incompleteness of Mechanistic Accounts.

Dennet (in'Content and Consciousness') builds up an account in physiological terms that seems to deal even with verbal behaviour in terms of brain activity. Events in the world impinge on the sense organs which produce neuro-electrical impulses. These impulses are processed through brain circuitry (as well as by the circuitry of the peripheral nervous system) and then are 'shunted off' into areas of brain and nervous system where they cause muscle contractions and hence physical movements, including those movements involved in the production of speech. Dennet's account is very sophisticated, he describes how, through continued use, nerve synapses grow closer together, reducing electrical resistance and hence building up new 'circuits.' Speech results when impulses reach the brain's speech centre in a way different in degree rather than kind from the way the knee-jerk reflex works. The difference being in the complexity of the impulses and of the circuitry involved. None of this seems objectionable to me, I find it very reasonable to suggest that much of the fine motor control involved in speech, movements of which we are not, and in some cases cannot (as a matter of fact), be aware, are caused by impulses generated in the brain. But the part of Dennet's thesis I cannot accept is his attempt to show that awareness is also a function of brain activity.

In brief, Dennet says that around the speech centre of the brain there is (speaking hypothetically) an awareness line. Once a neuro-electrical impulse crosses the awareness line we become aware of it. If the impulse is of the right sort its impinging on the speech centre causes the bodily motions that produce speech. If not, then we remain aware of that impulse and that is what it is to experience. Thought, under Dennet's model, is best

thought of as almost-but-not-quite-speech. At this point in reading Dennet's book I found myself wanting to know how he could deal with the fact that our experiences are of things in the world, of people, of chairs and tables, of sea breezes and rain, and not of neuro-electrical impulses. He himself forsaw that his readers would want an explanation of this, but seemed curiously unable to offer one.

In order to set the stage for the entrance of my assertion that a mechanistic model of mind as brain activity must fail to deal with the fact that the content of our experience consists of things in the world rather than of neuro-electrical impulses, I will quote from Dennet's book. First, on page 74 he writes,

> "In the brain, discrimination of afferents according to their significance just <u>is</u> the production of efferent effects in differential response to afferents, and hence it does not make sense to suppose that prior to the production of an efferent effect or structure the brain has discriminated its efferent <u>as</u> anything at all."

On this point I agree with Dennet. Viewing the brain as a complex machine, in terms of neurological circuitry, cuts out any opportunity to talk of judgements being made. In the same way it is not properly admissible to talk in terms of a computer working out a problem. A computer programme merely operates switches (in a digital computer) which lead to modifications being made to input voltages. At the output stage the modified electrical impulses cause certain characters to be exhibited (typed, displayed on a cathode ray tube etc.). But all Dennet has said so far is that in talking about anything in mechanistic terms we rule out the possibilty of talking about it in the intentional mode. In effect we make a decision not to use the intentional mode of speech in characterising whatever we are discussing.

Before going on it might be a good idea to give an outline of the intentional/extensional distinction which is very important to the discussion in this section.

The notion of extensionality is best defined exclusively. An extensional phrase is one which is not intentional. Intentionality has its roots in medieval philosophy, but the modern usage stems from Brentano's 'Psychologie,' (1874) where an intentional object was taken to be an object of thought. Intentional obejects, in Brentano's useage, have intentional existence, ie. existence in thought. This notion of 'existence in thought' was later abused by Meinong when he talked about intentional objects not as either being or not being, but as having 'beyond being.'

In order to avoid such difficulties, later writers have taken intentionality as involving mental events being directed upon an object. And more recently this has been developed into the idea that an intentional sentence (or verb) is one whose meaning involves the direction of the mind upon an object. There are problems in giving general criteria for the identification of intentional sentences but I have no need, and no space, to go into them here. Three types of intentional sentence have been identified which are:-

(1) Those in which the object many not (in fact) exist or else could not (in principle exist). "I dream of unicorns," is an example of the former type and "It is useless to search for the largest prime number," is of the latter type.

(2) Those in which the object is indeterminate and in relation to which the notion of further specifying the object is inappropriate. "I am dying for a cup of tea," is an example of such a sentence.

(3) Those sentences where the substitution of a true description of whatever is referred to by the (grammatical) object for the object would alter the sentence's truth value. Such a sentence is, "Oedipus wished to kill X," which is true when "the haughty stranger who barred his way," is substituted for X, but false when X is replaced by "his father."

An intentional sentence, then, is one in which a reference to a directedness of mind is implicit whereas an extensional sentence carries no such implications. In "Content and Consciousness," Dennet is involved in trying to give an account of mind entirely in extensional terms, that is, without using a mode of language which suggests that there is a directedness about mind. In other words Dennet does not want to ascribe anything uniquely mental to human beings. He wants to insist that there is nothing about us that makes talk of mental agency necessary.

On page 89 Dennet takes up his point of page 74 by saying that there may be some systems that will be amenable to description in extensional terms, but which, "..are such that they can be intelligibly described at this time, within our present conceptual scheme, only in the Intentional mode." He point out that many phenomena that once were characterised intentionally are now characterised extensionally, an example would be lightening which we no longer explain as being caused by angry gods. He also points out that we often extend the intentional mode to cover systems that we know can be fully characterised extentionally. We do, for instance, talk about computers working out problems and of cars, ships etc. having personalities. This latter point is, I suggest, not very important, it only indicates that fact that metaphor is a strong element in ordinary language, the intentional mode is not properly applicable to mechanical systems, which is what makes its application to such systems metaphorical.

Dennet's main contention here, I think, is that the intentional mode of characterising a system is a vague way of coming to grips with the world, a way that is useful in the absence of an adequate extensional characterisation of that system. But all Dennet is doing here is expressing his faith that use of the extensional mode is the way of understanding any system. What he doesn't do is attempt to show that the intentional mode adds nothing to an extensional characterisation. Indeed he rejects reductionism of the sort that says any intentional statement can be rendered completely in terms of extensional statements. He concludes at one point that attempts to discover the language of the brain, to discover the content of experience by deciphering the neuro-electrical brain state of a particular brain at a particular time must be doomed to failure. I was left unsure whether he thought this failure would be due to logical impossibility ot to unsurmountable empirical difficulties, although I suspect the latter.

This is the main problem for mechanistic accounts of mind, they have to deal with the intentional mode of language, the mode that enables us to talk in terms of experience having content. And apart from making insinuations about the relationship between the intentional mode of speaking and the 'mythical' ways of characterising systems, which he judges to be inferior to the scientific ways of understanding (I think), Dennet has not managed to get rid of intentionality. He says (p.131), "Events with content just arrive at the awareness line..." but has a whole chapter entitled, "The Ascription of Content." In this chapter he ends up by saying (if I understood correctly) that we are using the 'personal story' when we are talking of the content of experience, whereas when speaking of the brain in extensional terms we are involved in giving the 'sub-personal story.' These two stories seem, according to Dennet's analysis to be

mutually irreducible, a point on which I agree with him. But Dennet seems to think that the existence of these two logically disjoint ways of looking is not merely symptomatic of ontological differences.

I would be very happy to say that looking at human behaviour from the point of view of physiological mechanisms alone might be a very useful approach to a number of problems. Someone interested in the effect of brain damage in certain areas on the ability to acquire certain motor skills might find mechanistic concepts totally adequate for his job, and would have no use for the personal story. But someone interested, as I am, in the relation between symbol systems and concept acquisition, the ways in which the symbol systems we use enable us to reorganise our classification of experience, needs the personal story in order to even begin.

Dennet, however, seems unhappy about taking what might be termed the 'horses for courses' view. He seems unable to escape from a conviction that only extensional characterisations of systems should be acceptable, that intentional characterisations are so mixed up with mythical ways of understanding that they must not be taken seriously. But he doesn't seem able to support his conviction. In his conclusions he makes a number of statements that I will quote. In these he shows a certain amount of confusion, and also gives what I take to be his main reason for regarding the intentional mode of explanation with suspicion.

First he writes-

"Thoughts, for example, are not only not to be identified with physical processes in the brain, but also not to be identified with logical or functional states or events in an Intentional system (physically realised in the nervous system of a body)."

In characterising the intentional system involved as something which must be realised in a body in this quote

I think that Dennet is doing nothing more than revealing his inability to break away from a mechanistic way of looking at mind. As for the rest of his assertion here I can only say that I agree with him if what he is saying is that the extensional and intentional modes of looking at thoughts involve different ontologies, that they are neither more nor less than different ways of looking. If this is not what he means then I must confess myself to be incapable of understanding what he is saying.

The second quote I will give from Dennet's conclusion is-

"The personal story...could in principle be rendered 'obsolete' if some day we ceased to treat anything...as an Intentional system..."

Here again I see no objections provided what Dennet is saying is that people could stop using any particular way of looking. But to say this is to make a point that tells equally against mechanism, for is people stopped looking at the world in the way in which the physical sciences approach it, mechanism would have been discarded. But it is fairly clear that Dennet uses the word 'obsolete' here in the same sense that we use it when we talk about horse drawn carriages being an obsolete form of transport. He implies, in talking about intentional characterisations becoming obsolete, that extensional characterisations are in some sense better. But in making a judgement of this sort he is making use of a point of view. Something is better than something else only by virtue of satisfying criteria. And if Dennet's criteria are those found in the sciences it is not surprising that he finds extensional characterisations 'better.' A motor car is a better mode of transport than a horse drawn carriage in terms of its speed and comfort. From the point of view of aesthetics or of a romantic the horse drawn carriage might be judged to be a much better way of travelling.

My final quote from Dennet's conclusions is-

"Intentionality....persistantly tempts the theory builder into positing man-analogues in his analysis."

This assertion, I suggest, shows Dennet's confusion. He is incapable of accepting the intentional and extensional approaches as being ontologically disjoint. Because of this he leaves himself with the unsurmountable problem of explaining how neuro-electrical impulses in the brain can have content, and, unremarkably, is unable to explain. But because he can't stop believing that electrical activity in the brain is what is central in a discussion of mind he finds himself accusing those who talk about the content of experience, those who use an intentional characterisation of mind, of postulating a little-man-in-the-mind, a ghost in the machine, who reads the brain writing, who ascribes content to the neuro-electrical impulses coursing through the circuitry of the brain. Such a postualtion is , of course, inadmissible, leading to well known problems of how thisnew entity can ascribe content to its experiences; an infinite regress results. But to use this argument to suggest that talking in the intentional mode is a mistake, that talking about the content of experience is mistaken, is equally inadmissible. People do experience the world in which they live, they see tables and chairs, they are aware of the world around them. And to stipulate that to talk about this awareness is inadmissible because the mechanistic mode of explanation cannot deal with it is surely to get things back to front.

The problem is that talking about the nervous system in a purely mechanistic way can tell us nothing about the content of our experiences. All this way of characterising can talk about are neuro-electrical impulses modified by brain circuitry and resulting in movements of the body. It cannot explain how such impulses can have the sort of

significance for us that we talk about when using the intentional mode. But neither can the intentional mode tell us about how such significance is ascribed to incoming impulses. We have, apparently, two ways of characterising the same system, one in terms of physical events and the other in terms of information theory, and the two are logically disjoint.

My assertion is that given that there is no way in which the extensional characterisation of the nervous system can be made to enable us to talk about the experiences we have, it must be regarded as useful (for some purposes) but an incomplete way of looking at human beings. Insofar as our experiences are of things other than neuro-electrical impulses we need a different way of looking, a different mode of language if we are able to talk about experiences in a meaningful way. And if we are talking about the human mind and the formation of concepts, ways of classifying experience and of giving significance to events, then we must use a mode of language other than that which mechanists urge upon us.

The essential difference between myself and a mechanist is ontological, we have logically disjoint ways of looking at animal behaviour. The mechanist claims that the intentional mode of language is a 'second best' way of looking. I have denied that this is the case. The mechanist might claim superiority for his world view on the grounds that it only makes claims that are, in principle, empirically verifiable. But even this is a shaky claim given the fact that particle physics long ago started postulating the existence of certain particles on grounds that were more metaphysical than empirical. Thus the empirically verifiable events which the mechanists claim to be talking in terms of rest on a foundation which is justified to quite an extent these days on non-empirical grounds. The extensional and intentional modes of description are logically distinct forms of language, each embodying a set of presuppositions about the nature

of what they are being used to describe. (I will have more to say about this when I come to discuss understanding.)

It seems to me that each mode is useful for certain purposes, but not for others. The extensional mode cannot admit talk of persons in even the everyday sense of the word, it cannot deal with many of the things people say about themselves and others. Being interested in people I find it necessary to use the intentional mode of description when dealing with (at least) human behaviour. I cannot avoid the problems that this move creates for me; I must try to solve them. To avoid such problems by taking refuge in mechanism would be, as far as I can see, to beg a whole range of important questions.

In my next section I will discuss the problem of perception, keeping in mind what I have said here about the necessity of rejecting a mechanist mode of explanation when discussing people (or animals who are aware). This will get me nearer to returning to the central question of this part of my thesis, that of what must be true of the pre-linguistic child given that it will, at some stage, acquire linguistic skills.

Perception, Awareness and Recognition.

B.A. Farrell in 'A Psychological Look at Some Problems of Perception,' (R.I.P. lectures vol. 3-'68/9), suggests that psychological work on the problems of perception is showing signs of making philosophical discussion in that area redundant. His reason appears to be a belief that work on the physiological basis of perception will one day give a complete account of how we perceive. I disagree with him. The complete description of the physiology of perception will not, in principle (if my arguments against mechanism have any force), constitute an account of perceptual consciousness. The fact is that in seeing we are aware of what we see, our perceptual consciousness has content of which we are aware. And this content is something about which a psychologist who insists on using only extensional concepts can say nothing.

As I believe that seeing, hearing, feeling etc. involves awareness of whatever is perceived, and as the psychological approach favoured by Farrell seems to be one that reduces psychology to physiology, I cannot accept his suggestion that we leave discussion of perception to psychology/physiology, although I do not want to deny that looking at perception in those ways is a useful thing to do. Nevertheless there are those who would say that my writing of awareness into perception is unnecessary. One such attempt is discussed by Locke (in chapter 2 of 'Perception and our Knowledge of the External World) - it is a view of perception held by Armstrong.

For Armstrong "perception...is the acquiring of knowledge of, or inclination to believe in, particular facts about the physical world by means of the senses, normally accompanied by knowledge of the means."

Now if perception can be fully dealt with in this way without introducing awareness, and if analysis of knowledge and belief can also be given without talk of consciousness, then awareness would appear as an odd notion 'tagged on' to an account of human perception/ belief/knowledge/understanding, without any justification and my insistence on asserting the consciousness of human beings would appear to be just a human failure. But Armstrong is wrong.

Locke gives four objections to Armstrong. The first is that if perception is fully analysed in terms of the acquisition of knowledge and belief and if we acquire knowledge of the external world via perception, then Armstrong can say nothing at all about the acquisition of such knowledge. There is a vicious circle in the account which leaves the acquisition of knowledge of an external world a mysterious occurance about which nothing can be said - Armstrong explains, and can explain, nothing. Locke's second objection is concerned with animal perception. If perception and belief are logically connected then we cannot talk about animals perceiving unless we also talk about them formulating beliefs. I wouldn't wish to stress this too much in the light of Jonathan Bennett's comments in his book 'Rationality,' where the importance of language possession as a criterion for rationality is indicated. It may well be that giving an intentional characterisation of animals is unjustified anthroposophism and maybe the notion of perception, taken to involve awareness, is not properly used in talking about animals. Personally I tend to believe that my dog is, to some extent, a conscious agent, but it would take too long to investigate the question whether my belief is verifiable or merely evidence of sloppy sentimentalism on my part, so I will simply note that this objection of Locke's opens up massive questions which I cannot deal with here. Locke's third objection is related to his first. A sentence like, "I know it's raining outside because I can see the rain,"

becomes, under Armstrong's analysis, "I know it's raining outside because I have acquired the knowledge that it's raining outside." This tells us nothing and, further, seems to mean that the distinction between veridical and illusory perception of the external world depends on our having knowledge of that world acquired independently of our perception of it. This leads to the final objection which Locke raises against Armstrong which is that, under his view, checking beliefs against experience comes down to checking beliefs against other beliefs - in other words Armstrong seems stuck with a coherence theory of truth. The problem with this can be best illustrated by pointing out that the geometry of Euclid is completely consistent and that physicists since Einstein have discovered that Euclid doesn't describe space with complete accuracy. On Armstrong's view it is hard to see that a consistent geometry (i.e. set of beliefs about space) can be false, but Euclid, despite the internal consistency, is not an accurate account of space. The central weakness of coherence theories of truth lies in their inability to decide between incompatible systems of belief each of which has equal consistency. There are at least three completely consistent geometries of which Euclid is only one - a coherence theory has no way of concluding that Euclid is wrong. These objections show that we can't get rid of awareness by Armstrong's move.

Locke talks about awareness in terms of sensory awareness which "...is connected with certain types of brain activity." (p.27) as a matter of contingent fact. Sensory awareness occurs "...whenever the brain and sense organs are activated in their various ways..." In saying such things Locke is noting that certain physiological conditions must be satisfied for perception to occur. I agree with him on this but prefer not to use the term sensory awareness. This is because I wish to make a

stipulative distinction between sensation and perception which I will observe in this section as a means of making my account clearer.

The distinction I want to make is between a notion of perception which has the percepient's awareness of what he perceives written into it and a notion of sensation which I will take to be fully explicable in terms of neuro-physiology. This move does violence to the usual philosophical notion of a sensation, which has awareness written into it - pain for instance is a sensation and one of which we are aware. But I would justify my stipulative distinction by observing that workers on the physiological basis of perception do talk about perception in the context ofa purely extensional account of the neuro-physiology of the sense organs and the brain. Thus in philosophy, both 'perception' and 'sensation' are often used in a way which presupposes awareness whilst in neuro-physiology the same words are used in the context of a mode of explanation which (if my remarks in the previous section have any force) simply does not admit talk of awareness.

The relationship between intentional and extensional characterisations of human beings is not a logical one, the two modes of description are mutually irreducible. On the other hand the difficulties associated with mind/body dualism seem to indicate that a person is one thing. Thus we must accept, it seems to me, that although there may be a correlation between extensional and intentional accounts of perception, for instance that if I am seeing a tree then also my retina is being excited in certain ways and my brain is in a particular neuro-electrical state, the two sorts of account must not be confused, we must not produce a hybrid account of perception involving both a neuro-physiological model and awareness. It is in order to minimise the risk of confusing two different approaches

to talking about perception that I will distinguish between perception as involving awareness and sensation as being a purely physiological phenomena. In later discussion I will return to using 'sensation' in its more usual philosophical sense, but in this section I will use it as having purely mechanistic connotations. In this way my account of perception, as a process involving awareness, will be kept free from mechanistic presuppositions. My stipulative distinction between perception and sensation is to be seen, then, as a formal move designed to make my account clearer and to help in avoiding dangerous confusions, for instance, the confusion involved in seeing perception as sensation (in a mechanistic sense) plus awareness - an account which leads to the postulation of a ghost-in-the-machine and to a fatal and well known infinite regress.

Perception then, involves awareness, in seeing a tree we are aware that there is a tree in front of us. It seems to me that the notion of awareness may not be analysable. Wittgenstein pointed out that all explanation must stop somewhere and awareness, I suggest, is a stopping point in explanations of persons just as causality seems to be a logically primitive concept in the sciences. (I will discuss causality briefly in a later section). The most important point to grasp, though, is first that awareness is totally unanalysable in extensional terms and second that this fact is more indicative of the incompleteness of extensional modes of description than of the emptiness of the concept of awareness. Both these points were argued for in the previous section.

In my discussion here I am interested in the fact that people are perceptually aware. This leads to the observation that what we are perceptually aware of is a world of trees and clouds and people, that seeing (for instance) is seeing-as. In other words when we perceive we subsume what we perceive under some description or concept. This view can lead to giving an account of perceptual awareness

which is closely tied to language and this issue will be examined later in this section. What must be grasped, however, is that the attempt to give an adequate account of perceptual consciousness is a logically different sort of endeavour from the attempt to give an account of the neuro-physiological mechanisms of sensation. Here I am engaged in the former activity.

A central question in this section will be that of what it is that we are perceptually aware of. I will begin the attempt to answer that question by looking at the problems which arise when philosophers assert that in perception we can only be aware of appearances, not material objects, and that statements about material objects can only be justified inferentially from statements about appearances.

The starting point for a great many theories of perception has been the observation that when we see something like (for instance) a circular plate, we rarely see a circle. This is to say that although we are quite happy about saying that the plate is circular (or apparently so) our visual image is almost always elliptical. Thus, the ar gu ment goes, what we see is an elliptical image made up of patches of light, shade and colour. Any statement that we are looking at a circular plate is, therefore, the product of inference. We infer from the visual image, which is all we are aware of, that it is caused (in some sense) by a material object of some sort. In this way a logical gap is opened up between the material world and the world of perceptual experience. On the one hand we have the world of material things and on the other we have the perceptual experience of which we are aware. On this account of perception the central philosophical question which arises is that of how our senses can give us knowledge of the world in which we live.

The immediate problem generated by any approach which separates our sense impressions from the real world in this way is that it gives a foothold to the sceptic who can suggest that although we have beliefs about the external world arrived at via perception, we cannot justify those beliefs. The only way to establish that we have knowledge of the real, external world, according to the sceptic, is by supporting statements about material objects with statements about perceptual experience. Two sorts of attempt to do just this have been made. The first, representationism, states that our perceptual experience is causally dependent upon external reality. The second, phenomalism, makes the relationship between our perceptual experience and external reality a matter of logical necessity - material objects on this view are constructs from sense impressions, the given in perceptual consciousness.

Representationism has a fatal flaw which must lead to its rejection. On p.174 of 'The Nature of Things,' Quinton writes:

> "Any Representationist theory requires us to accept some contingent proposition asserting a relation of causation and perhaps resemblance, between objects and impressions. In requiring this proposition to be accepted prior to the justification of any beliefs about objects it rules out its own justification. What is more it destroys the conditions of its own intelligibility. How can any theory about the nature of objects or their relation to impressions be understood if the only words we can understand are those which refer to impressions and it is assumed that words for objects cannot be defined in terms of them. Representationism could only be intelligible or justifiable if there was some direct access to or acquaintance with objects. But if there is such access the assumption that all knowledge of objects is derived from impressions must be abandoned."

Thus the basic premis of representationism is, in terms of the theory itself, unintelligible - the conditions for its intelligibility contradict the assertion that we can only infer the nature of external reality from the impressions it

'causes' us to be aware of.

I would suggest that causal theories in general tend to be the result of theorists' being seduced by accounts of the physiology of perception, which are mechanistically causal in nature. But although such accounts are perfectly intelligible they cannot take the place of philosophical theories of perception as they are constructed on a basis of physicalist presuppositions which are, philosophically speaking, problematic. Any causal account, as Grice admits in his article 'The Causal Theory of Perception,' carries with it the conclusion that the material world is not directly perceivable. Grice lists three contentions common to causal theories (p.109 in 'The Philosophy of Perception' ed. Warnock). These are:

> "(1) that perceiving is to be analysed in causal terms, (2) that knowledge about perceived objects depends on causal inference, and (3) that the required causal inference will be unsound unless suitable general principles of correspondence can be provided..."

These contentions quite obviously fall foul of Quinton's objection. Grice doesn't attempt to refute this objection, and I can't see how he could, instead he accuses those who raise it of being "...unsympathetic in a way that is philosophically important." I fail to see why causal theories should not be attacked and dismissed in this way mainly because it seems to me that the principles of correspondence which any causal theory needs in order to be able to distinguish between true and false perceptual statements cannot be obtained. Such principles cannot invoke perceptual experiences, for in that case they would be using the notion of perception to analyse itself. Thus they must depend upon perceptual statements corresponding to facts known independently of perception - this leads straight back to Quinton's objection, namely that if we have direct access to the world then it is not true that all our knowledge of it is inferred 'from

appearences. It might be possible to rescue causal theories by saying that we can have direct knowledge of how things are not through perception but through intuition or through metaphysics, but this would be an odd course to take given the fact that we commonly hold that we know (eg.) that it's raining because we see it or because we get wet. There is a view to the effect that true knowledge is not attainable through the senses but only through knowledge of some metaphysical Absolute, through an all encompassing, complete and logically consistent and necessary account of reality.

But if causal theorists attempt to prop up their account through absolutism they are, in effect, giving way to the sceptic, admitting that only beliefs (and not knowledge) are acquired through perception and then saying that their beliefs can be checked against knowledge acquired other than via perception. In any case to attempt to back up a causal theory by the invocation of a metaphysical Absolute is to abandon the theory for it is to deny that we acquire knowledge of the world through causal inferrence from appearence. Thus I think we must accept Quinton's objections to representationism and give up causal accounts of perception.

Phenomenalism, the idea that we are in some way construct material objects from sense impressions, has lasted longer than representationism in modern philosophy, but still has problems which seem to require its abandonment. Quinton (p.175) describes phenomenalism in these terms:

"Phenomenalism interprets the belief that there is an object here as asserting that certain impressions would be forthcoming if certain conditions of observations were realised, if I opened my eyes, turned my head, put out my hand and so forth. If I actually do perceive the objects then some of these possible impressions must be actualised."

The weakness of phenomenalism is that it asserts a logical relationship between hypothetical statements (eg. If someone goes into that room and looks in the right place, under the right conditions, he will see a table) and statements about existing states of affairs (eg. there is a table in that room). The problem is that no finite number of purely hypothetical statements can ever be logically connected to a statement about what actually is the case. My first example in this paragraph is not, in fact, a purely hypothetical statement, "If someone goes into the room...," should be written as, "If someone has the impression of going into the room..."

On p.176 Quinton writes:

"In fact it is highly doubtful if even these hybrid hypotheticals with objective hypotheticals follow from statements about objects. The number of conditions that have to be mentioned is very large, even if to a great extent negative, and almost certainly not known in its entirety, since we do not know all the circumstances which might prevent an observer from having an impression of a table that is right in front of him. We do, indeed, know a good deal about the empirical conditions of having impressions of what is in front of us, concerned with the medium and the physical and mental state of the perceiver. But we have only discovered this because we have a lot of information, independantly acquired, about objects on the one hand and the impressions perceivers have of them on the other."

Ayer, in "The Problem of Knowledge," argues against phenomenalism in a similar way to Quinton. Ayer writes (p.130):

"Just as a statement which implies the existence of a given physical object is not formally refuted by the fact that in a specified set of circumstances the object does not seem to be perceived, so the fact that it does seem to be perceived is not a demonstrative proof that the statement is true."

But Ayer goes on to suggest that we can imagine limiting cases in which,"...in what appeared to be the relevant setting the object would always seem to be perceived..."

and similarly for cases in which an object was never perceived. Such cases, Ayer suggests, would, in principle, establish the truth or falsity of the relevant physical object statements, even if, as a matter of fact, there are no such cases, our ability for lack of attention, self delusion, etc. being what it is.
Ayer writes(p.131):

"The phenomenalists are right in the sense that the information which we convey by speaking about the physical objects that we perceive is information about the way that things would seem, but they are wrong in supposing that it is possible to say of the description of any particular set of appearances that this and only this is what some statement about a physical object comes to. Speaking of physical objects is a way of interpreting our sense experiences; but one cannot delimit in advance the range of experiences to which such interpretations may have to be adjusted."

Ayers position is that physical object statements are used by us in a way which makes sense experience count for or against their truth, they are not constructions from sense data, they are ways in which we talk about our experiences he writes (p.131):

"...it does not greatly matter whether we say that the objects which figure in it (ie. a theory) are theoretical constructs or whether, in line with common sense, we prefer to say that they are independently real."

I have a great deal of sympathy, as will become apparent in later discussion, for Ayer's position here. But it has very great problems. Quinton comments (p.177):

"The virtue of Ayer's position here is that he does not hide behind the eirenic principle that belief in objects is a theory designed to explain the order of our impressions. For by itself that thesis is an evasion of the problem rather than a solution of it. The point is: what sort of theory? Is it a substantial explanation like the atomic theory of matter, or a logical construction, like the theories of electrical and magnetic fields? To choose between these possibilities is to opt for the representative theory or for phenomenalism."

Now I accept Quinton's critique of Aver which comes down to an assertion that Ayer hasn't really given his account any solid basis. I am sympathetic to Ayer's view that the concepts we use in talking about the world are used by us to make sense of it. But in failing to specify the status of the things to which our statements refer Ayer's account leaves open a dangerous possibility. If our statements don't refer to an independent reality then language can be seen as a closed system and reality as a social construction and nothing more. This move has been made by some sociologists of knowledge and leads to a fatally relativistic account of reality. I will be discussing the problems associated with this move in my section 'Ways of looking'.

Later in this section, and in later sections, I will adopt the view that via language we construct ways of looking at what is nevertheless a reality independent of the ways in which we conceive of it. Quinton cannot move in the direction I will take as his account in 'The Nature of Things' is explicitly materialist. He attempts to maintain this thesis by discussing awareness entirely in terms of intentionality as a grammatical feature of language. He does not, however, say anything which shows my assertion of the incompleteness of mechanistic accounts to be wrong and I therefore feel justified in asserting the logical distinctness of accounts of perceptual consciousness from accounts of the physiological mechanisms of sensation, and in continuing to regard the central problem with perception as being to do with perceptual consciousness. My desire to discuss perception in terms of perceptual awareness of the world will lead me to part company from Quinton. But the parting of our separate ways doesn't come just yet. Quinton still has useful things to say about appearances and I will stay with him until I have looked at this part of his account.

After dealing with representationism and phenomenalism Quinton goes on to look at what someone who claims that

we can only see appearances, not material things, could in fact be saying. He makes the point that we don't in general see patches of light, shade and colour, that we see things like tables and chairs, trees and houses. But he doesn't take the step which I shall take which is to talk about, for example, seeing being seeing-as, ie. to say that perception involves concept application. Instead Quinton attacks the all-we-are-aware-of-is-appearances school by looking at three different uses to which the verb 'appear' can be put. These are:

(i) Epistemic - statements like, "It appears to be a horse," and, "It looks like a horse," are statements not about sense impressions but about a belief which we are not sure of. Quinton's point is that such statements are often made when something like bad light or too great a distance between ourselves and what we're looking at makes us unsure. The essential point though, is that such statements are clearly about the external world and not about,".... private subjective entities, states, or contents of private sense-fields." (p.180).

(ii) Perceptually Minimal - we can say, "It appears to be a horse," or, "It looks like a horse," in a situation where we've actually stated, "That's a horse," and then been asked if we're sure. The point here is that looking like a horse is not a sufficient condition for being a horse - a horse must have a particular sort of physiology and life history amongst other things. A wax-work horse or a robot horse might fool us into thinking it was a horse, but we would be wrong. Here again an appearance statement is about the external world. Quinton writes (p.181):

> "If I say of a piece of cloth held up in a poor light that it looks, appears or seems to be green I may well mean that anyone would be inclined to say that that was its colour rather than expressing my own inclination to believe that it is green. But I shall not be saying that it has the directly visible properties that green things usually have for there are no such properties except actually being green which is what I have already, tentatively, said it is."

(iii)Phenomenological - this is the sense-data theorists notion of 'appearance.' Here, "There appears to be a horse," is properly to be defined as, "There is a horse-shaped patch in my visual field." Quinton regards a phenomenological way of looking as being something we need to learn. He writes (p.181):

> "In the phenomenological use of 'appear' and its cognates we suppose a set of conventional, idealised conditions of observation to obtain even though we may know that they do not, because we do not, for these purposes care whether they do or not. In the case of vision we suppose that what we see is on a flat surface a few feet directly in front of us in broad daylight. In other words we treat what we see as if it were a picture viewed under ideal conditions."

Quinton claims that this is an acquired skill, lacking in primitive painters (for example) and that this skill is acquired, "...after we have learnt to perceive and describe things in the ordinary, natural, non-phenomenological way." About this phenomenological skill he writes (p.181):

> "To acquire it is to learn how to adopt an unnatural attitude to the world around us which involves the supposition of the framework of our ordinary beliefs about it. And to adopt the phenomenological attitude is to abandon the attitude, psychologically incompatible with it, in which we normally look at the world."

Quinton says that the phenomenological mode is the only sense in which appearance statements are about something private. He further argues that such statements are not given as support for physical object statements whereas both epistemic and perceptually minimal statements are. He also makes the point that a phenomenological account of any perceptual experience is something we construct rather than a way of reporting what we are immediately aware of.

It is about now that I part company with Quinton, largely because his materialistic intent leads him away from

talking in terms of concepts and perceptual consciousness which is precisely the direction I want to take. But I will agree to quite an extent with what Quinton is basically asserting: that there is no gap, logical or otherwise, between the world as perceived and the world as it really is. This is not to say that we cannot make perceptual mistakes or be victims of illusion. It is simply to say that there is no justification for postulating a reality which, in principle, is inaccessible to human perception.

There is a problem with this assertion that in perceptual consciousness we have direct access to the real world which arises from the consideration of animal perception. The argument here would be to the effect that the world which the senses of animals reveal to them must be a very different world to that which our senses reveal to us. If this is the case then we must conclude that there is a gap between reality and out experience of it. To refuse to acknowledge this is to say that human perception has a priviledged position over animal perception in terms of revealing the world accurately, and we simply have no justification for saying this. Now this argument seems very strong, but before it can be assessed we must look at what sort of account of perception it presupposes. I will look at one possible interpretation of the basic argument and try to show that it is not as strong an objection to my account as it might seem.

One of the strongest ways of backing up the basic objection might seem to be pointing out physiological differences between homosapiens and other species. Insect eyes are very different from human eyes, so the information transmitted from eye to brain in the two cases will be dissimilar. Some burrowing animals have very poor eyesight and find their way about by scent and touch, two senses, which are relatively lacking in sensitivity in human beings, so here again we have very different information transmitted from sense organs to brain. A final example of different

modes of sensing being used comes in electric fish. These creatures send out pulsed electro-magnetic fields as a sort of radar, they also sense not only disturbances in their own electromagnetic fields, but the pressure of other fields. There has been some work on psi-phenomena in recent years which suggests that phenomena such as telepathy might be related to the sort of sensing of electro-magnetic fields which we know that electric fish use, but it is clear that this sort of electrical sensitivity is a mode of sensing which is at least very poorly developed in our species.

All this 'evidence' in support of the basic argument is given (and has to be given) in terms of physiology and presupposes a causal account of perception in which the world impinges upon the organism producing, in a mechanistically causal manner, nerve impulses which flow from the peripheral nervous system, are processed through brain circuitry etc. What is wrong with such accounts, as I argued at length in the previous section, is that they have no room for talk of awareness. All this evidence is evidence of different modes of sensing in the sense I stipulated earlier which is logically distinct from perception. Stories about different modes of sensation, about different mechanisms of sensing, do not, and cannot, say anything about awareness. If perception was sensation plus awareness then the argument from animal perception would be problematic for me, but such an account leads inexorably towards the postulation of a ghost-in-the-machine and hence towards an infinite regression which shows that perception cannot be analysed as sensation plus awareness. This means that the initial argument from animal perception can be seen as an argument from animal sensation in a sense which is logically distinct from talk of perception taken to involve awareness. So, in fact, on the interpretation offered above the initial argument says nothing about perception and the 'evidence' of insect eyes, burrowing animals and electric fish is evidence about

different modes of sensing and has, logically speaking, no relevance at all to an account of perceptual consciousness. The best that can be said is that the physiological conditions for perception to occur can differ between species, and I can accept this without altering my basic position on our having direct access to the real world in perceptual consciousness.

What makes the so-called 'objection from animal perception' seem so strong is the conflation of the notions of perception and sensation, the assumption that evidence about physiological differences is evidence of a difference in the content of perceptual awareness. This would only be the case if a mechanistically causal account of perception was correct, but mechanism cannot deal with awareness and causal theories in general have insuperable problems. Thus the physiological evidence, generated on the basis of presuppositions incompatible with the fact of perceptual awareness, is logically irrelevant to my account of perception.

Nevertheless it might be argued that some animals are perceptually aware and that, because of their use of different senses, what they are aware of is a very different world. It seems to me that this assertion is problematic in the extreme. One way of trying to establish this position is by tying awareness to concepts. Under such an approach what we are capable of being aware of depends on the concepts we possess. Later in this section I will be rejecting this contention, but for now I will point out that it opens up two possibilities. The first is that concepts are essentially linguistic entities in which case awareness is logically tied to language possession and it is wrong to talk of animals which don't possess language as being aware. If this account were correct then talk of animal perception (taking perception to involve awareness)

would be improper, it would be unjustifiable anthropomorphism. If some concepts, on the other hand, were not essentially linguistic, if concepts were seen as principles of classification and concept possession were seen as a matter of an ability to classify things in accordance with the relevant principles, then there is no difficulty in suggesting that to some extent human beings and other animals might share concepts and hence share awareness of the same world to that extent. This second view still holds some problems for me, but it still holds that awareness is concept bound in a way that makes concept application, in part at least, a matter of giving content to perceptual awareness. My view, however, is that conceptualisation is a matter of picking out and attaching significance to various aspects of the world to which we hace access in perceptual consciousness. I will argue for this later and if I am right it follows that a tendency to conceive of the world in different ways in no way carries with it the implication that people (and animals) who conceive of the world differently perceive different worlds. What I will argue is that tying awareness to concept application leads to a very odd account of what concept application is, one which leads either to a sensation plus awareness view of perception or else slips into solipsism.

A final point about the argument from animal perception must be that differences in sensitivity don't necessarily lead to us saying that people or animals whose perception is more or less sensitive in different areas perceive different worlds. My claim is that in perception we have access to the real world , not that what we see, hear etc. is all there is to the world. Someone who is colour blind sees the same world as someone who isn't but fails to pick up certain detail, similarly the deaf and the blind perceive the world less well than those who see and hear, they perceive the world differently but there is no justification for saying that they perceive a different world. This point

can be generalised to animals who (assuming for the sake of argument that they are perceptually aware) perceive primarily via smell or touch or via sensitivity to electro-magnetic fields. The fact that we can explain how these animals perceive, that we can condition them or train them to respond to stimuli or signs which unaided human perception cannot differentiate between, is strong evidence, I suggest, that they perceive the same world. Thus, it seems to me, animal perception doesn't provide valid objections to my assertion that in perceptual consciousness we have access to the real world. I would also point out that I have given those who talk about animal perception the benefit of a very real doubt. I have not discussed the subject of the ascription of awareness in any detail, and I cannot do so here. But whereas human beings are aware it is clear that talk of awareness and the use of intentional concepts is not appropriate for explaining the behaviour of Amoeba. In his book, 'Rationality' Jonathan Bennet concludes tentatively that an essential criterion for the ascription of rationality is language possession. If this is the case, then maybe language possession could also turn out to be a necessary criterion of awareness. In this case we should only talk about animal sensation. I tend to believe that some animals, notably the higher mammals, are perceptually aware, but, as I said earlier, I cannot take time to support my contention here. In my discussion of animal perception I have accepted the contention that animals are perceptually aware without question and still found that the objection from animal perception doesn't require me to alter my belief that in perceptual awareness we have access to the real world. My position is very much strengthened when we realise that in allowing talk of animal perception (as opposed to animal sensation) I have accepted, for the sake of argument, a contention which is in itself problematic in the extreme.

Before leaving this subject I should once again stress the distinction between sensation and perception. Sensation, as I use it in this section, is to do with an essentially mechanistic account involving the relationship between an organism's nervous system and the world. Perception, on the other hand, is to do with a percipient's awareness of the world. The two sorts of accounts are very probably accounts of the same process from different points of view, but they are logically distinct. A parallel case of the two logically distinct accounts of the same phenomenon occurs in the wave and particle theories of light in physics, which still coexist. In such cases we quite obviously would prefer a unified account which would replace the two incompatible accounts, but we must accept that this unified approach requires a new way of looking, not the jettisonning of one or the other current approaches. It seems to me that in the case of perception and sensation the fact that we know more about what is involved in sensation shouldn't be allowed to seduce us into jettisonning the attempt to give an account of perception, or (although I cannot even suggest how this could be done) the attempt to produce a unified account. Perceptual consciousness is an important phenomenon and its analysis raises different questions which should not be begged. It seems to me that many causal theorists and others who insist on talking about the the physiology of perception are in danger of overlooking very important areas of study concerning perceptual awareness.

I will now begin the attempt to establish my own account of perception, starting from Quinton's three types of appearance statement:
(i)epistemic - "I'm inclined to believe that it's a horse but I'm not all that sure."
(ii)perceptually minimal - "Anyone would be inclined to say that it's a horse."
(iii)phenomenological - "There's a horse-shaped patch in my visual field."

I'm not altogether happy with Quinton's characterisation and dismissal of phenomenolgy, although I think that the phenomenologists have problems when they insist on trying to give a linguistic account of what is given in perceptual consciousness. I will try to make this clearer when I get on to discussing the role of concepts in perception. For now I want to observe that the three sorts of sentence do form a sort of hierarchy, one which culminates in a fourth sort of sentence - statements about what really is the case.

Phenomenological statements seem immune to error in the sense that provided we don't tell lies or make verbal slips they appear to be incorrigble. But as they do involve concept application and no concept application is totally immune from error their incorrigibility can be seen really to come down to their not being questionable by others - we make a claim only about something which, in principle, others cannot inspect, and so nobody can demonstrate someone else's phenomenological statement to be false. There are serious problems with taking them to be a fundamental in perception as to represent learning to use words as a matter of labelling essentially private entities comes up against objections raised by Wittgenstein which I will be discussing in the next section. The apparent and questionable incorrigiblity of phenomenological statements is of little value as it is gained by not making any statement about the external world - in reporting how things seem to be (in this sense) we simply fail to say anything about how things are.

Perceptually minimal statements are about an external world, but hedge their bet by saying not that something <u>is</u> the case, but rather that anyone seeing 'this' state of affairs would be inclined to say that such and such is the case. Such statements are more open to question than phenomenological ones, but are still fairly safe - "Anyone would say that X," can be true when X is false. Interestingly such sentences can also be false when X is true. For instance

if the utterer saw a green cloth in poor light, claimed that anyone would say it was green and then, by controlled experiment, found that most people said blue or brown.

Epistemic statements are most open to question and this is because of their closeness to a statement that something really is the case. An epistemic statement falls just short of a knowledge claim because the utterer makes it clear that although he is inclined towards certain beliefs he believes the available evidence to be inconclusive.

The next step in the hierarchy would be to really stick our necks out and say that something really is the case, that the available evidence makes us believe that (eg) there really is a horse there. Here we have stopped hedging bets and decided to discount the possibility that we are the victims of an illusion, hallucination, or any other of the myriad possibilities that can make us wrong. In such a situation the utterer discounts the possibility of error and makes a knowledge claim. The value of such claims is that they open up possibilities for action. If we refuse to act except on the basis of certainty we can never act. This fact, however, doesn't destroy the distinction between epistemic statements and knowledge claims. The distinction is not logical, it is a matter of degree. In the former case the utterer is inclined towards certain beliefs but isn't happy with the evidence, he would rather not act on the basis of those beliefs (although he might at a pinch). In the case of a knowledge claim the utterer regards the evidence as good and is happy to act on the basis of the beliefs he has. In neither case, of course, is the utterer necessarily right.

It seems to me that the fact that we often act (in general - have expectations) on the basis of perceptually based knowledge claims and that those actions turn out successfully (ie. our expectations are fulfilled) gives us reason to conclude that perception is a source of knowledge.

This might be questioned by pointing out that the fact that someone can shave successfully using a mirror doesn't show that what we see in the mirror is reality rather than image. But the only reason such an objection can be raised is that we know the relation between what we see in a mirror and the object of which it is an image.I don't want or need, to question the fact that we do perceive images in mirrors, photographs and on television, and that such images can be inaccurate representations, be incomplete or distorted or misleading. It is the case that we do perceiv -e images in some cases and that we must be careful about inferring from the image to the reality. But the reason that we know to be careful of images is that we are aware of the differences between them and the reality they represent.

I can accept these points about a distinction between images of these sorts and reality, but not that they can properly be generalised into an account of perception which maintains a distinction between reality and appearance. This is because specific cases like these are only comprehensible against a backdrop of knowledge of reality and the more general account of perception which they might be taken to imply must end up as either representationism (most likely given the physical explanation of such images) or else phenomenalism. Both of these views, as I have shown, end up contradicting themselves, making the acquisition of knowledge via perception inexplicable, or cutting off such knowledge from an independent reality.

In the example of shaving by using a mirror we make use, in the act of shaving, not only of knowledge of the image, (derived perceptually) but also of knowledge of the relation between mirror image and object which, again, we get through seeing things like people's faces and the mirror images of those faces. It should also be noted that mirror images are part of the real world and not to be contrasted with reality in the same way as some philosophers dealing with perception have contrasted appearance and reality. A face and its mirror image are not reality and

appearence in the philosopher's sense, they are different though related, aspects of reality. Our knowledge of the relationship between face and mirror image is our knowledge of a relationship between different aspects of reality. Thus I think it is reasonable to say that our ability to act in particular cases on the basis of expectations which we acquire through both our existing knowledge of the world and our perception in the particular context, and the fact that our actions turn out successfully/our expectations are fulfilled, supports the claim that in perception we have access to the real world. In all the cases where this is questioned, it seems to me, the questioner can be shown to be holding an incoherent view, or begging the central question or holding a very odd notion of reality (as with Plato), or all three. Nevertheless I do not want to say that there is never a distinction to be made between what we see (or think we see) and what is the case.

The distinction between what we perceive and what is the case is not, I want to say, one between reality and appearence as used by some sense data theorists - I think I have established that such views are untenable. The distinction, I believe, is to be made in terms of the applicability of concepts. I want to say that in organising our perception of the world we subsume the basic content of perceptual awareness under publicly established concepts. In this process we can make mistakes, be deluded etc., and the conditions under which we perceive (poor light etc.) can make us uncertain about what we perceive. Phenomenological, Perceptually minimal and epistemic statements are all ways of hedging our bets against errors. In making a knowledge claim we discount the possibility of error even though this possibility always remains present. All manner of factors, external and internal can effect our perception, it is always possible that we have made a mistake or been the victims of illusion- things are not always as they appear. But often we don't make mistakes.

The distinction between appearance and reality as I wish to make it depends upon the fact that we do have ways of distinguishing between verdical and illusory or mistaken perception - we can do this by checking with others and by discovering that expectations which our perceptions lead us to have are fulfilled. This position cannot be attacked by suggesting that these criteria come down to the coherence of the perceptually based beliefs of different people or the coherence of an initial set of perceptually based beliefs with beliefs acquired via subsequent perceptual experience. To mount an attack along these lines presupposes a distinction between appearance and reality which makes reality inaccessible to perception and hence leads to the insuperable problems connected with with either representationism or phenomenalism. The postulation of a reality which, in principle, is inaccessible via perception is unjustified. Thus there is no justification for suggesting that the agreement in use of language necessary for us to be able to check our perception against what others perceive comes down to nothing more than coherence or that the fulfillment of perceptually based expectations by subsequent perceptual experience can be explained by reference to psychology rather than the world. It is true that communities do reach agreement on matters not related to the perceived world -some might accuse religious communities of willfully ignoring what they see around them. It is also true that expectations can lead to their own fulfillment - we have the relationship between teacher expectation and pupil performance and also the fact that if we expect tea and are given coffee it takes a few sips before we realise what we're drinking. But again, the fact that we can cite such examples shows that we are able to distinguish illusion (etc.) from reality in a way that remains incomprehensible if we begin from the assumption that, in perception, we have no access to the real world.

Errors in perception, as I have said, result from many factors. The role of concepts in perception is an

important source of difficulty, we have (in the case of language users) to decide whether 'this' thing we are (eg.) seeing is properly describable as a table or a chair, and although such judgements are often straightforward they can be problematic. One problem which often turns up is the fact that in everyday life we have to make do with criteria which strictly speaking are not adequate. For instance a cunningly constructed robot horse might fulfill all the visual criteria of being a horse and yet wouldn't be a horse. The point is that a vigorous set of criteria for the correct identification of a horse must include not only looking and behaving like a horse, it must also include a reference to things like having the correct physiology and life history. It is questionable here whether we should say that in everyday life we make do with incomplete criteria or whether we should distinguish between an ordinary language concept of a horse which does not involve reference to physiology and life history and a specialist biological concept which does use such criteria. I suggest that insofar as anybody would be likely to admit they were mistaken if what they had taken to be a horse turned out to be a robot we should say that the ordinary language concept, the criteria which we usually take to be adequate (in everyday contexts) for the identification of horses, are incomplete. The specialist biological concept is more complete but it is not used in everyday life as it is impractical to use it and because the logically inadequate ordinary language concept is nevertheless perfectly adequate in a practical sense in that, as a matter of fact, we rarely (if ever) see things that look and behave like horses which aren't horses. In everyday life we use criteria which are practically adequate even if they are theoretically inadequate - this means that our ordinary language ways of looking have a built in theoretical possiblitiy of error which we discount simply because such errors, although possibilities, don't occur with sufficient frequency to constitute a practical difficulty.

What this implies is that in perceptual consciousness we are given (in normal circumstances) access to the real world. We then formulate ways of conceiving that world, and it is the modes of conceptualisation we use which constitute the things which we perceive as being things of certain sorts, physical objects, persons etc. Each way of looking at the world embodies certain assumptions about the things it picks out and leads us to have expectations about the behaviour (in a theoretically neutral sense) of those things. Insofar as those expectations are not frustrated we are justified in believing that the particular mode of conceptualisation captures some aspect of the world. This is the case even for comparatively crude ways of dealing with the world such as ways of counting (1,2,3, a few, many) used by some primitive peoples. Any group of objects can be counted in this way, although we might feel that a more sophisticated counting system would be more useful. It is no part of my thesis that a way of looking which works, in terms of leading to expectations which are fulfilled, thereby gives a complete account of how things are in the world. All I'm saying when I talk about a mode of conceptualising some aspect of the world, is that it fits the world adequately - and here I take 'adequately' to mean 'adequately given the purposes of those using the way of looking' (the problems which this raises will be discussed much later in this thesis when I look in detail at the relationships between the ways of looking which people use and their interests).

If things start going wrong, if events in the world don't turn out as our ways of looking lead us to expect, then we must accept that our current beliefs about the nature of the world are in some way mistaken, our current modes of conception do not capture adequately those aspects of the world we took them as explaining.

I have outlined the sort of account I want to give and in doing so have introduced the idea that concepts are centrally concerned in perception without giving any strong argument as to why this should be accepted as being the case. It therefore seems a good idea to begin fleshing

out my account by showing the importance of concepts in perception. I will then continue with dealing with problems arising from the introduction of concepts.

That perception involves concept application is very widely held, largely resting on the common sense observation which Quinton pointed out - that what we see is a world of tables, chairs, trees etc. In other words when we perceive we subsume the objects of perception under concept headings, we pick out aspects of experience which have significance for us. In support of this thesis I would point out that in many cases specialists, people who have grasped the specialist concepts of a systematic discipline often notice significant detail where a layman notices nothing special at all. So a geologist notices facts about, say, the Lake District which the average holiday maker overlooks completely. I am not saying that the non-specialist sees nothing at all in such circumstances, only that the possession of particular concepts allows us to pick out significant detail which, if we don't possess those concepts, we wouldn't notice (this is a bit over simplified but not totally so - later discussion will clear up problems to do with the generation of new concepts) Thus, it seems, any explanation of how we direct our attention to certain significant aspects of the world requires us to talk about concept possession. Hamlyn, in 'The Theory of Knowledge,' expresses this by saying;

> "In order for a man to see something correctly as X, what he sees must be an X, he must have the concept of an X..."(p.180).

In other words if we are perceiving the world correctly we must first have a conceptual framework which fits the world and, further, for any individual to see something correctly as, say, a table, he must possess the concept of a table. Someone who lacks this concept still sees something when he sees a table, something which he might

characterise in a different way, but he doesn't see a table in that he lacks the ability to see anything as a table - he sees what we call a table but is incapable of recognising it as such.

The main source of oddness in this account lies with the notion of the content of perceptual awareness. Conceptualisation seems best thought of as a process of picking out and attaching the correct significance to particular features of the world to which perception gives us access. This implies that there is something given in experience and that we apply concepts to this given. On this matter Hamlyn writes: (p.186)

> "It is impossible that the awareness of an object of which I have spoken should be gotten through any features of sensations as such...For this would imply that we first had to be aware of these features of our experience, and then the notion of an object would have to be reducible to these features or would have to be derived from them by some process of inference. Neither of these things is possible."

The reasons for the last sentence here are those which Quinton draws out. Inference from appearance to object just can't be explained intelligibly. Knowledge can't be given in experience, we derive knowledge from experience through conceptualisation.

There is a possible implication which might be drawn out from this quote from Hamlyn which (as I will indicate in a later section) Hamlyn is equivocal about in his recent work. I will draw out this implication and build it into an account which I will not accuse anyone of forwarding - instead I will use it as a straw man, hoping to get some useful results out of demolishing it.

In talking about awareness in the way he does Hamlyn seems to be moving towards an account of awareness which

says that in conceptualisation not only do we direct our attention to specific things but also that we only become aware of objects as we recognise them to be things of specific sorts. A further move in this direction could be to say that concepts involve public criteria which are established by (and only by) interpersonal agreement in the use of language. I must stress that this account is not forwarded by Hamlyn although I believe that there is evidence of some tendency in this direction in his recent work. What follows from the moves I have built into my artificial account is that in perceptual consciousness we are aware of a world of tables and chairs etc., that we could not be aware of anything unless we possessed a linguistically formulated concept of it and hence that awareness is inextricably tied in with language possession.

I cannot accept this account for a number of reasons. My first problem is that I cannot see how a child could ever acquire language if his perception was not organised in some way and this seems to require talk of pre-linguistic concepts (I will be discussing this notion more fully in later sections). I also find it difficult to see that awareness is tied to language possession. It would seem odd to say that a child is not perceptually aware at six months old but is at two years old when he can use language to some extent. So it seems to me that the account I have constructed has two initial problems, it makes awareness something which is acquired with language and (hence) makes it difficult to explain language acquisition. These objections will recur in this and later sections.

The main problem of my naive account of perception, though, is that by bringing concepts into perception at too low a level it builds into perception the notion of using a logically arbitrary system of classification. It

builds recognition of a thing as being a thing of a particular sort into the concept of seeing (etc.) There seems to be little in this account for the idea that sometimes we see things which we just can't recognise as anything, as when we 'see' something unrecognisable on a bedside table when we're still half asleep which, when we look more carefully turns out to be the alarm clock. Now it might be argued that seeing the alarm clock in this example should be explained in terms of the conditions under which we view it being such that we can conceive it only as a vague looming shape and not as the alarm clock it is, and there is something in this; but at a more fundamental level this sort of defence of my 'straw man' is not available.

Consider the problem of what we see the first time we see an apple, before we have acquired language - what did we see? We can't plausibly suggest that we see nothing until such time as we have acquired at least some linguistically defined concept (of a physical object for instance). On the contrary we usually learn words like 'apple' by ostension, by learning to use the word to refer only to certain of the things we see. So we learn linguistically defined concepts by learning to use the concept words to name the appropriate objects of perception. And unless we were aware of a world of distinct things it would be impossible to learn that 'this' word is properly to be used only to designate certain things. If we could only distinguish between different objects of experience once we had acquired some linguistic concept we could never acquire any such concept as we would not know what was being pointed out (or even that someone was pointing or looking etc.)

Yolton, in his article 'Perceptual Consciousness' (R.I.P. Lectures '68/9) tries to use psycho-analytic notions, like Klein's idea of a pre-linguistic phantasy life to explain how pre-linguistic children come to be

able to distinguish between different perceptual objects, but this is no answer. All such a move achieves is to push the question back to the level of asking how the child comes to distinguish between different aspects of this phantasy life. It is not just perceptual experience which needs organising, any experience on this line of argument must be recognised as an experience of . something of a linguistically defined sort before we can be aware of it. This account which I have constructed cannot say anything about perceptual awareness without tying it to a notion of recognition which is just too strongly language based.

I can accept that recognition, in some senses, does seem to be part of perception. But if this sense always involves the use of linguistically defined concepts, then, I think it is clear, the acquisition of language could not be explained except by some sort of doctrine of recollection. As far as I can see we must accept the coherence of a non-linguistic notion of recognition in terms (in certain basic cases) of an innate tendancy to pick out certain aspects of the world as significant. Unless we accept this, I believe we find language acquisition to be a mysterious and incomprehensible occurence.

If being aware of seeing something is also recognising it as a member of a particular class of things, then logically we cannot become aware of anything if at an earlier time we could not have been aware of at least something. An alternative way of putting this is to say that if a pre-linguistic child lacks some concept of a 'thing' (in an unspecified sense) at any time in his life, then he could never become aware of being in a world of 'things' and hence could never learn to classify these things as being objects of various sorts.

This fact leads to problems for any account which, like this artificial account I am using as a heuristic device,

ties concepts to language. Such accounts must ascribe innate knowledge of language to pre-linguistic children or innate knowledge of a set of structural rules of language. A number of attempts to do this have been made in terms of ascribing innate knowledge of the deep grammar of language - Chomsky and Davidson have both expressed such views and I will be arguing that they are not justified in doing so in both the next section and in my discussion of theories of meaning. For now I will simply state that the ascription of innate knowledge of language is both unnecessary and unjustifiable - the full argument will be left for later.

If, on the other hand we regard concepts as being principles of classification and concept possession as being nothing more than having the ability to classify things in certain ways, then talk of innate concepts does not necessarily carry with it talk about innate knowledge of language. There are objections to this view of concepts which I will deal with later, but here I simply wish to point out that in my account talking about innate concepts doesn't raise the contentious issue of innate knowledge of the rules of language. If babies without learning tend to pick out certain things as significant because of the relationship between those things and naturally significant states (and I would speculate that these states might be things as basic hunger and its satisfaction - although the specification of what <u>is</u> naturally significant is a job for psychology - not philosophy) then it is proper, under my account, to ascribe innate concepts to them.

The adoption of a notion of concept possession which is not logically tied to language allows me to escape from one major set of problems which the naive view I am working from gets bogged down in. But it doesn't avoid another problem which arises from the tying together of conceptualisation and the phenomenon of awareness. I built

into my naive account the assertion that becoming aware of something depends upon conceptualisation, and this comes down to recognising it as a thing of a certain sort, or more generally as a thing with particular significance. Now this doesn't mean that someone who lacks the concept of a computer would see nothing when faced with a computer, he wouldn't see it as a computer, but he might see it as a large, metal and plastic 'thing' which makes funny noises etc.. But my naive account must hold that we cannot be aware of anything unless we can subsume it under some concept. This seems an odd account of conceptualisation to me. I have suggested that concept application should be regarded as a process of organisation of classification, and if I'm correct then the question of what it is that is organised/classified must arise. This is where my notion of a given in perceptual consciousness comes in. My idea is that in perceptual awareness we have direct access to the world but that in focussing awareness on particular aspects of the world, in picking out certain things and attaching particular significance to them we are organising the basic given, we are conceptualising the world, looking at it from a perpective which picks out aspects of reality which are significant for us. This process of picking out/focussing attention on significant detail, of classifying the things we perceive as being things of certain sorts, is what I see as conceptualisation, the principles of classification being the concept. The relationship between language, modes of conceptualisation/ways of looking and the world will be discussed at some considerable length later in this thesis.

There are those, for instance Ryle in 'Concept of Mind,' who might question my talking about conceptualisation as a process. Ryle says that perception is an achievement rather than a process, but he also says that perception presupposes the process of observation, about which he says

very little (see Locke p.28). Now it may well be that talk of someone seeing a tree is such that the statement 'He sees the tree,' entails the truth of, 'He has seen the tree,' but this in no way leads to the conclusion that seeing cannot be shown to be a process. Seeing-as is self evidently something which can take time, we can see what is a tree in a mist and be unsure until we have looked carefully for a few seconds about whether what we see is a tree. I suggest that it is proper and necessary to talk about perception-as in terms of its involving a process of conceptualisation which, although it normally takes very little time, can take a noticeable time in some circunstances. This is a process of judging that 'this' object of perception is a thing of a certain sort.

It seems to me that if we fail to distinguish between a basic content of experience of which we are aware and the process of conceptualisation in which we recognise this thing-in-the-world of which we are aware as a thing of a certain sort, then we end up with a very odd account of concept application. My naive account fails to make this distinction and so builds the giving of content to perceptual experience into the process of conceptualisation. Under this approach the basic content of perceptual consciousness is a world of tables, chairs, trees, etc. On the other hand I want to say that in perceptual consciousness we have, normally, direct access to the world, that the given in perceptual consciousness <u>is</u> the world and that the process of conceptualisation is one in which we make sense of the world, pick out particular aspects of the world and attach the relevant significance to them. To support my own approach I will examine the approach built into my naive view and attempt to show that it leads to fatal difficulties.

The contention I am concerned with is that we can only be aware of something which we have subsumed under some concept, which we have recognised as a thing of a certain

sort. In other words that only through conceptualisation can we become perceptually aware of anything. This amounts to saying that conceptualisation is a process through which perceptual consciousness is given content. The idea of giving content seems to imply that our basic perceptual input is content free. A tempting idea at this point is that of giving a mechanistic account of perceptual input and then saying that conceptualisation is a process whereby we read significance into the neutral impulses coming into the brain, and thereby become aware of the world which, by impinging upon our bodies, causes those neural impulses to be generated.

This account, of course, is totally unacceptable. The idea of us reading significance into neutral impulses involves postulating a ghost-in-the-machine who 'reads' the incoming signals - like a telegraph operator reading the dots and dashes coming down the line. And this sort of account is, once again, the result of confusing sensation and perception. Perceptual consciousness is, as as matter of logic, inexplicable in terms of the physiology of sensation. In giving an explanation of anything we must guard carefully against jumping to and fro between logically distinct modes of explanation, and to insist on introducing an account of the physiology of sensation into an attempt to say something about perceptual consciousness is simply to confuse matters. An account of the physiology of sensation is a logically different animal from an account of perceptual consciousness. A refusal to see this will lead to a logically heterogeneous and hence inconsistent account. Thus talking about conceptualisation being to do with giving content to neural impulses is not only logically incoherent, it is symptomatic of a failure to grasp a fundamental logical point about two different modes of explanation - it's as if someone interested in explaining the beauty of a painting began

by chemically analysing the pigments used. We must conclude that conceptualisation doesn't give content to perceptual consciousness in the sense of giving content to a content-free 'input' and hence allowing us to become aware of it. So one attempt to explain the link between concepts and awareness, as postulated in my naive view, has failed rather miserably.

The only other way awareness could be logically linked to concept application as far as I can see (and my imagination might have failed me) has difficulties just as great as those of the view I've just discussed. This is the assertion that the world is constituted by the concepts we use, that reality is entirely a matter of interpersonal agreement. In one sense I feel that the idea that reality is a social construct has quite some force, and this is to say that I do feel that the interests of people play an important role in the choice of the ways of looking, ways of conceiving the world, which we use. But on my view, which will be discussed at length later, although the ways of looking we use are to some extent chosen by agreement within a community, what is looked at, what is conceived in various ways, is an independant world to which we (in normal circumstances) have direct access in perceptual consciousness. To go beyond this, to say that in perceptual consciousness nothing is given except a world constituted by interpersonal agreement in use of concepts is to move straight into idealism in which talk of an independant reality is simply unjustified. It would be absurd to make such a move. The denial of an external reality would even undermine the notion of interpersonal agreement - what if other people were nothing more than a figment of my imagination? Of course, this view collapses completely once we bring Wittgenstein's private language argument to bear on it - I'll be discussing this argument in the next section. So my second attempt to back up my naive view's linking of awareness and conceptualisation has foundered.

The failure of my naive view combines with the arguments I borrowed from Quinton to suggest a workable account of perception. We must start from the assertion that in perceptual consciousness we have direct access to the real, public world and not to a world of mere appearance from which we must infer the nature of a reality which, in principle, is not revealed by our senses. I do not deny that we can be deluded, can hallucinate or simply make mistakes in perception. But we cannot move from the assertion that some perception is illusory to the assertion that all perception is illusory - to do this is to walk right in to some or all of my earlier objections to representationism. It is worth noting that this sort of view, because of the incoherence of it's basic assertion that there is a real world even though we can't see it, cannot be taken as saying merely that we are always mistaken about how things are. It must be taken as saying that none of our talk of an external reality makes any sense at all - this will hopefully reduce the attractiveness of representationist accounts.

Perceptually based knowledge claims do form a basis of belief upon which we formulate expectations and plan action. That such actions turn out successfully, that such expectations are fulfilled, gives us reason to believe that ourperceptions are verdical. We are not always successful, sometimes our perceptions are not verdical, but usually we get by. One reason for this is that our identification of 'this' as a thing of a certain sort is usually based on criteria which are logically inadequate. We accept the possibility of error because the logical possibility doesn't constitute an unacceptable risk. Even our most vigorously formulated specialist concepts aren't totally secure, if things don't turn out as his theory predicts a scientist can, ultimately, go back and question the basic concepts, can come to doubt whether, in fact, they do capture the nature of those aspects of reality he took them to fit. What I am saying is that empirical knowledge

isn't absolutely certain, but it is nevertheless accurate enough most of the time to make it worth our while to plan our future actions on the basis of well established knowledge. Similarly perception is not infallible, but neither is it totally illusory. I should make it clear, though, that this belief - that the utility of perceptually acquired knowledge in allowing us to plan action suggests that we do normally have direct access to reality in perceptual consciousness - is not the central pillar of my argument. The assertion that we do have direct perceptual access to reality is most strongly established by the quite separate argument that its denial leads to either representationism or phenomenalism, or some variation on these basic themes, and that neither of these basic positions is tenable. My reasons for raising the relationship between perception, knowledge and action (more generally interests and purposes) have to do with my interest in the role of interests and purposes in understanding - this will be dealt with later.

Thus we must say that the external world is revealed to us in perceptual consciousness. We must not try to explicate this assertion by tagging on to it an account of the mechanics of sensation, such accounts are quite proper but, as I have shown, are logically distinct from accounts of perceptual consciousness. It remains a possibility that a unified account of perception might one day replace the two logically distinct modes of description we now have, but until such an account is forthcoming (and I can offer no suggestions about the nature of such an account) we must keep the distinction clear. So when we're talking about perceptual consciousness we must end our explanation at the point of saying that in perceptual consciousness we are given access to,an external reality. Our experience of the world, I would suggest, is only partial, being contingent upon the nature of human beings, but what we see, hear, touch etc. is,except in cases of hallucination etc., the real world.

What is also the case is that, through the use of shared modes of conceptualisation, we organise our perception, pick out important features of the world. The most important conceptual frameworks we use in everyday life are those built up through language, but as I have said, we must, if language acquisition is to be possible, have some innate tendancies to pick out certain aspects of the world we perceive as being significant. This move will be argued for more fully later. It means that there are some things that are naturally significant for us, that, as a matter of human nature, we can't help noticing what stings or burns us, or what satifies hunger. Such things are facts about us, although, as I have said, a full account of what is naturally significant for human beings is something to be given by psychologists, not philosophers. I should also say that it is no objection to my thesis that new-born babies show few signs of awareness and respond to few stimuli - it may be the case that some of our natural tendancies require a certain amount of physiological development before they become manifest. Wittgenstein . pointed out that pointing is a uniquely human activity and that the significance of a pointing finger cannot be learned ostensibly. Bruner (and I will be referring to his work more extensively in a later section) has discovered that the ability to use and respond to pointing is a skill which appears in babies towards the end of their first year. The need for development does not undermine my assertion that some innate tendancies to pick out certain things as significant are necessary for language acquisition to be possible.

This talk of somethings being naturally significant brings with it, as I have admitted, talk of innate concepts. This, I believe, is not problematic so long as I keep my account of concepts as principles of classification and concept possession as being a matter of possessing an ability to classify things according to the relevant principles.

This account of concepts has been attacked and in a later section I will defend it. But it seems to me that the strongest defence of it is the observation, made earlier, that making concepts essentially linguistic entities either makes language acquisition inexplicable or else leads to talk of innate knowledge of language - I will argue that the postulation of innate knowledge of language is unjustified in later discussion.

The role of concepts in perception is not to do with the giving of content to experience, it is to do with organising a given content, with picking out certain aspects of our experience of the world and 'reading in' the correct significance. An example might help to make my meaning clear. The first time I walked down Holloway Road in North London it was at night. My knowledge of the area was virtually nil; I could recognise various things as lights, shapes, other roads etc., but I couldn't attach any particular significance to anything, all I could do was to recognise the various things I saw as members of very general classes of thing. The whole experience was strange and rather worrying - I missed the turn-off for Caledonian Road (where the room I'd just moved into was) and ended up catching the tube from Highbury and Islington to Kings Cross from which point I could find my way home. But only a few months later Holloway Road was a familiar place, shops had particular significance, roads all went somewhere. What happened was that I had come to be able to pick out lots of individual landmarks which had significance for me, which told me where I was and how to get home. What was given in my experience of Holloway Road wasn't changed, what had changed was my ability to attach significance to that experience.

It seems to me that this is precisely the role of conceptualisation in perception - to allow us to pick out

and attach significance to various aspects of the world of which we have perceptual experience. The ability to conceptualise our experience makes the world manageable, in conceptualising experience we attach significance to what we perceive and thus we know what it is what we are seeing, know what to expect of it and hence can plan a course of action (where appropriate) on the basis of that knowledge. My Holloway Road experience doesn't quite capture this as, of course, my own conceptual development was already quite advanced at the time and what I lacked was particular knowledge of that area. But there is, I feel, an analogy between this experience of mine and that of a young child confronted by the world. The parallel lies in the problem of having to make sense of something unfamiliar and it is this process of getting to grips with the unfamiliar, of having to discover which aspects of reality have what significance and of 'setting' together those aspects of the world which have, for whatever reasons and from whatever point of view, the same significance that I want to call conceptualisation- so conceptual development is a matter of progressively learning about the world, of acquiring the ability to attach more and more significance to more and more aspects of the world as revealed to us in perceptual consciousness. One important role of education, I think it is clear, must be to promote conceptual development in this sense.

At this point I will leave my account of perception. I think I have made my account clear and also that I have made the remaining problems clear. In my next three sections which will be on(i) The Private Language Argument , (ii) Concepts and Language, and (iii)The Conceptual Development of the Pre-Linguistic Child, Iwill try to deal with the problems left unresolved here. The same problems will recurr in later discussion as I develop my ideas until, I hope, my account of the

relationships between the external world, perception, concepts and language will be established strongly enough so that I can rest an account of understanding on the framework they provide. I should also pacify those who will have been disquieted by my rather glib and unsupported linking of knowledge with action and truth with expectation. I am aware that this is not a point of view that would be acceptable to many and, indeed, is unsupportable with respect to certain kinds of knowledge. But in what I have written here all I want to assert is that in some circumstances perception does provide us with knowledge and this is why we often manage to act successfully on the basis of perceptually acquired beliefs. As I have said, however, the most important support for my contention that in perceptual consciousness we have direct access to the real world lies in the earlier part of this section where, using Quinton's arguments, I tried to show that the denial that we see the real world leads to accounts of perception which are simply untenable.

The Private Language Argument: its relevance to the notion of a given in experience and to the problem of recognition.

In the previous section I talked about perceptual consciousness having content prior to conceptualisation. This content may be seen by some as essentially private in the sense that no-one else could, in principle, be aware of the basic content of my experience. Such an observation might seem to bring my account of perception up against Wittgenstein's private language argument. I must therefore look at my account and at Wittgenstein's argument to see whether in fact I have reached an impasse.

Wittgenstein's argument is also important to my account for another reason. In talking about pre-linguistic children being able to recognise their mothers I have claimed that they are capable of making 'sameness judgements,' of judging that 'this' object of current perception is (in some sense) the same as something they saw yesterday (say). On one interpretation of Wittgenstein such a view might appear nonsensical.

Before going on to look at the private language argument I would like to say one thing: the argument is over twenty years old and, on the evidence of what has been written on the subject, it would hardly be unfair to say that Wittgenstein's choice of words when he wrote 'Philosophical Investigations' was not so precise as to present his meaning unambiguously. In fact the number of mutually contradictory interpretations of the significance and import of the private language argument is quite staggering. Thus I must admit that in attempting to reconcile my account with Wittgenstein's writings I will be looking for what seem to be reasonable interpretations of the relevant passages from 'Investigations.'

My objections will be to possible but (in my view) dangerous interpretations of what Wittgenstein wrote. Whether or not these objections are at all relevant to what Wittgenstein intended to say with 'Investigations' I do not know. The prose style of that book is not straight forward, much of it might even be thought of as cryptic. Unfortunately, as the book was put together and published posthumously, nobody had any chance to corner the author and get him to explain crucial sections (and Wittgenstein might not have been very forthcoming anyway) so I am left with the task of trying to find a path through the mass of interpretation which the private language argument has given rise to. I will attempt to find such a path.

The basic statement of the argument occurs in paragraph 258 of part 1 of 'Philosophical Investigations:'

"Let us imagine the following case. I want to keep a diary about the recurrence of a certain sensation. To this end I associate it with the sign'S' and write this sign in a calendar for every day on which I have the sensation. - I will remark first of all that a definition of the sign cannot be formulated - But still I can give myself a kind of ostensive definition - How? Can I point to the sensation? Not in the ordinary sense. But I speak, or write the sign down, and at the same time I concentrate my attention on the sensation - and so, as it were, point to it inwardly. - But what is this ceremony for? for that is all it seems to be! A definition surely serves to establish the meaning of a sign. - Well, that is done precisely by the concentrating of my attention; for in this way I impress upon myself the connection between the sign and the sensation. - But "I impress it on myself" can only mean: this process brings it about that I remember the connection <u>right</u> in future. But in the present case I have no criterion of correctness. One would like to say: whatever is going to seem right for me is right. And that only means that we can't talk about 'right.'"

Wittgenstein conceived of language as consisting of a multitude of overlapping language games, each 'game' being a form of life within which linguistic signs are given a use, the use a sign has constituting its meaning within that form of life (culture <u>or</u> sub-culture). The

important point here is that the rules of any language game are established by public agreement in the use of signs, either tacitly as in the case of the natural languages or overtly as in the systematic disciplines where rigorous definition of technical terms is often a matter for international convention. Thus the notion of a language is inextricably linked with the notion of a public agreement on the use of linguistic signs. And the notion of a private language, if that is taken to mean a language which, in principle (and not merely in fact), is intelligible only to one person, its 'creator,' is seen as being a contradiction in terms.

If this was all that was taken to follow from the private language argument, and it may be that Wittgenstein intended that nothing more be read into his words, then I would have no difficulty in accepting his conclusions. The 'language game' view of language is, it seems to me, a very useful one. But more could be read into his words; which is to say that on certain interpretations of sections of 'Philosophical Investigations' following para. 258, the private language argument would appear to have consequences beyond the impossibility of an essentially private language.

The problem is whether the impossibility of giving a use to the sign 'S' in a context like that of para. 258 stems from the absence of rules governing the use of that sign or whether the difficulty arises from the (supposed) impossibility of making sameness judgements in the absence of publicly defined criteria of sameness. In para. 378 Wittgenstein writes:

> ""Before I judge that two images which I have are the same, I must recognise them as the same." And when that has happened, how am I to know that the word 'same' describes what I recognise? Only if I can express my recognition in some other way, and if it is possible for someone else to teach me that 'same' is the correct word

here.

For if I need justification for using a word, it must also be one for someone else."

And earlier in para. 265, he had written:

"Let us imagine a table (something like a dictionary) that exists only in our minds. A dictionary can be used to justify the translation of a word X by a word Y. But are we also to call it a justification if such a table is to be looked up only in the imagination? - "Well, yes; then it is a subjective justification." - But justification consists in appealing to something independant..."

(265 continues by arguing against the idea that memories can be justified by appealing to other memories).

Now if, and it seems likely, Wittgenstein's intention here was to insist that when we use words we are either using them in the context of a publicly defined language game or else we aren't using words at all, then I am in sympathy with his thesis. But this is not what I am talking about when I make the claim that there is something which pre-linguistic children do that is properly describable as making sameness judgements.

What I am claiming is that the pre-linguistic child learns that certain aspects of its experience have significance, and that this can only be the case if it recognises those things. And it can only recognise anything if it, as a matter of course, 'sets' its experiences according to some unlearned criteria. There must be some primitive unlearned classification of the 'things' of experience if any learning is to be possible otherwise each new experience would be, from the childs point of view, unique and thus no patterns of associations between different sorts of experience could be built up. The 'things' which are built up under this system of classification are regarded, and reacted to, in similar ways. It is this

grouping together that I regard as constituting a sameness judgement.

There is no tension between my account of the pre-linguistic child and Wittgensteins arguments if his account in P.I. is taken to be of how language works and nothing more. Linguistically defined concepts 'set' the world in a conventionally established way. All the 'things' of experience to which a publically defined concept applies are the same(ie. the concept of sameness applies to them) in that respect. Which is to say that all those members of the class of things to which the concept 'red' is properly applicable are the same in one respect - they are all red. Put simply this becomes: everything that is red is the same colour, although of course this breaks down if we abandon the over-all concept 'red' and begin to classify colours in a more subtle way. Then we get the common place oddities of everyday language like saying that blood and a London Transport 'bus are the same colour, but different (ie. different shades of red which is a reference to a more detailed set of colour concepts than the ROY G BIV of the 'o' level physics spectrum).

The danger to my account of language acquisition lies in an extension of the private language argument which Wittgenstein would quite possibly have rejected. I won't accuse anybody of having held this view, except, possibly, myself at an earlier date, but elements of it seem (to me at least) to hover between the lines of the writings of some philosophers of language. This is the view that it is meaningless to talk about judgements of any kind in the absence of language. It is a view that tends towards a belief that mind is a function of language, that all talk of mind should properly be understood as talk about the linguistic habits of human beings. I will attempt to construct a basis for such a view and then attempt to demonstrate the fallacy behind it.

Someone taking this view might first say that my talk of

pre-linguistic children classifying their experience in certain ways, "as a matter of course," is just a bit too far fetched. They might well claim that to classify something is to classify it as something, and that involves the application of criteria by which this 'thing' is identified as a thing of a certain kind. Thus, it might be said, my mistake is that of ascribing innate ideas to human beings, a move which gives rise to very great problems (I will discuss these later).

The next move might be to observe that correct classification depends on the correct application of criteria. And as, for the pre-linguistic child, there is no means of discovering what the criteria are, let alone whether they are being applied in the right way, then (in the words of para. 258), "...that only means that here we can't talk about 'right.'"

Thus the private language argument is used (improperly, I think) against my thesis. The mistake here, I suggest, is that in order to make an argument about language apply to my thesis about how a child comes to acquire language it has been assumed that Wittgenstein's account of how linguistic judgements are made is an account of how all judgements are made, and this has been done with no justification. But this is only an aside, my main purpose in setting up this line of argument is to give it enough rope to well and truely hang itself.

The thesis under discussion might continue by asserting that, in principle, any judgement stands in need of justification by appeal to something independant: another out of context use of Wittgenstein, but one that will finally lead to the fatal contradiction. For the language user, it might be thought, this appeal to something independant might be simply an appeal to other language users. But this cannot be so. If all judgements stand in need of justification by appeal to something independant,

then any judgement to the effect that these language users have just backed up my judgement that, say, 'this' is a horse also stands in need of justification by appeal to something independant. And this second order 'something independant' cannot be other language users, otherwise we have an infinite regress. In general it must be fairly obvious that if the 'something independant' is something external, then the person making the judgement has to make a further judgement about whether or not the something external supports his initial judgement and this leads to the infinite regress. Thus the 'something independant' must be something inner and the prime candidate for the 'language over mind' view must be the individual's knowledge of the rules of language.

This is fatal for the thesis I have set up. If no judgements can be made by anyone who does not know the rules of language, then no such person could ever acquire language. If the rules of language were not already known, then no judgements about experience could be made and hence no knowledge of the world of experience could be organized (including knowledge about the rules of language). Thus, under this view, the fact that children acquire linguistic competence could only be explained by recourse to an almost Socratic doctrine of recollection. Children would have innate knowledge of language which would lie dormant until 'triggered off' by interaction with their environment.

The thesis could be propped up by using a Chomskyan approach. Under such a view we would have innate knowledge of the rules of the deep structure of language and what would be acquired would be knowledge of the surface structure of one particular language. But this would not solve any problems. David Cooper has pointed out (in his book 'Knowledge of Language') that to talk of knowing rules is empty if there is no way of specifying which rules are known. Chomsky has set up his transformational grammar in opposition to phrase-structure grammar. He doesn't claim that the transformational approach fits aspects of

language as it is spoken that the phrase-structure approach doesn't, rather he claims that it is a better way of looking at language. But both transformational and phrase structure grammar are technical tools forged by linguists and no matter which way of describing language is adopted by them, for whatever reasons, there is no justification for taking the view that people use language in the way they do because they know the rules of one or the other of them (or indeed of any other grammar). Cooper's point is that any number of formal sets of grammatical rules may adequately describe our linguistic behaviour and as there seems no way of deciding which set of rules people are following when they use language it is inadmissible to talk about linguistic behaviour as rule following in a strict sense. I would back up that point by observing that nobody would claim that a falling stone falls as it does because it is following a set of rules even though physicists have established rules for accurately describing and predicting the motion of falling bodies.

The essential thing to grasp here is that the systematic disciplines formulate theories which fit the facts in which the discipline (as a public endeavour) is interested and which are useful in that they further the discipline's purposes and explanatory ideals. Those theories constitute rules for the description of phenomena, and often for their prediction (especially in the physical sciences). But it is not true to say that the described phenomena occur because they follow the descriptive rules the discipline has established. Thus, whilst it is quite proper for linguists to describe language in any way they find useful, it is improper for them to assume that people use language as they do because they follow the rules which linguists have formulated. (this topic will be covered in greater detail when I discuss theories of meaning of the Davidsonian variety in a later section).

Once it is accepted that talk of innate knowledge of the rules of language is unjustified, then what I have

called the language over mind view of the making of judgements can be seen to be fallacious. If I am right in adopting the view of Wittgenstein's writings already outlined then it would seem that this view of the relationship between mind and language could only arise from a misunderstanding and hence a misuse of the private language argument. When this is grasped then it is not too difficult to grasp the idea that the facts about language acquisition can only be as they are if it is a basic fact about human beings that we just do classify our experience in certain basic ways as a matter of course, without learning to do so.

This does not exhaust the possiblities for the misunderstanding of the private language argument. The 'beetle in the box' section (para. 293) is also capable of being used to suggest that talk of an 'inner' component of experience (and I take perceptual experience to be as vulnerable in this respect as sensations) is improper or confused. Wittgenstein writes:

"If I say of myself that it is only from my own case that I know what the word 'pain' means - must I not say the same of other people too? And how can I generalize the one case so irresponsibly?

Now someone tells me that he knows what pain is only from his own case! - Suppose everyone had a box with something in it: we call it a'beetle.' No one can look into anyone else's box, and everyone says he knows what a beetle is only by looking at his beetle. - Here it would be quite possible for everyone to have something different in his box. One might even imagine such a thing constantly changing. - But suppose the word 'beetle' had a use in these people's language? - If so it would not be used as the name of a thing at all; not even as a something: for the box might be empty. - No, one can 'divide through' by the thing in the box; it cancels out, whatever it is.

That is to say: if we construe the grammar of the expression of sensation on the model of 'object and designation' the object drops out of consideration as irrelevent."

Oswald Hanfling, in the Open University text 'Language and the Privacy of Experience' (Units 20-22 of course A402),

draws attention to the 'ifs' in this section. His claim is that it is wrong to interpret this as evidence that Wittgenstein had slipped into the errors of behaviourism. Hanfling interprets this section of 'Investigations' as claiming that if we insist on saying that a word like pain, for example, is the name of some essentially private 'thing', a 'beetle in a box', then we arrive at the conclusion that the existence or otherwise of that 'thing' is irrelevant to the functioning of the language game in which the word 'pain' has a role. In other words, if I have correctly grasped Hanfling's point, Wittgenstein was not a behaviourist at all, rather he was pointing out that the assumption that sensation words name essentially private entities leads to behaviourism. This point needs a little clarification.

The view that there is some essentially private thing that corresponds to a word like 'pain' is what Wittgenstein was arguing against. This view says that we have these things (called sensations) and that we learn to associate the sensation word with the appropriate sensation. It is an approach which leads to assertions like, "Nobody else can have my pain," being taken to be, in some sense, necessary truths (although there are problems about trying to say in what sense they are necessary truths). Wittgenstein's claim seems to be not that such assertions are either true or false, but that they have no place in the language game of sensations. What has happened here is that a grammatical move admissable in the language game of physical objects has been improperly imported into the language game of sensations and has led to confusion.

I will attempt to illustrate the mistake made by the 'private object' approach, but instead of talking in terms of sensations I will use the wider category of experiences. Consider the following pairs of sentences:

1.	a) I have a hat.	b) I have an experience.
2.	a) This hat is mine.	b) This experience is mine
3.	a) You could not have my hat.	b) You could not have my experience.

The b) sentences here are constructed in exactly the same way as the a) sentences from a grammatical point of view, the only difference being the substitution of 'experience' for 'hat', and yet there are important differences between the two sets of sentences. Sentence 2a adds something to sentence 1a precisely because I could have someone else's hat (they might have left it behind when they visited me). And sentence 3a is obviously false, you could have my hat, I could give it to you (although I might not). But sentence 2b doesn't seem to add anything to sentence 1b precisely because sentence 3b seems to be an obvious truth. A hat is a thing which can be in the possession of someone who doesn't own it and the possession and ownership of hats can change independantly of each other. For example, say person A owns a hat which he loans to person B who, at a later date, loans it to person C who is now in possession of the hat. A asks B about the hat, and B, being unable to return A's property, gives A the money to buy a new hat, saying that he will keep the old one for his own use when C returns it o him. The ownership/possession sequence goes:

(i) A owns and possesses the hat.
(ii) A owns and B possesses the hat.
(iii)A owns and C possesses the hat.
(iv) B owns and C possesses the hat.

The point I am trying to make is that the ownership/possession distinction I have made here has no possible parallel in the case of the b) sentences, those dealing with experiences. So although the a) and b) sentences are grammatically similar we should not allow this similarity

to mislead us into thinking of experiences as if they were things in the same way as hats are things. This is possibly what Wittgenstein had in mind when he wrote in para. 304 of Investigations:

> ""But you will surely admit that there is a difference between Pain-behaviour accompanied by pain and pain-behaviour without any pain?" - Admit it? What greater difference could there be? - "And yet you again and again reach the conclusion that the sensation itself is a nothing." - Not at all. It is not a something, but not a nothing either! The conclusion was only that a nothing would serve just as well as a something about which nothing could be said. We have only rejected the grammar which tries to force itself on us here.
>
> The paradox disappears only if we make a radical break with the idea that language always functions in one way, always serves the same purpose: to convey thoughts - which may be about houses, pains, good and evil, or anything else you please."

To refer back to my sentences 1a and 1b. What Wittgenstein is saying here (I think) is that the grammatical similarity of such sentences is misleading. We can interpret, 'I have a hat,' as saying something like, 'There are things called hats and this thing that I have is one of them.' But to interpret, 'I have an experience,' in the same way leads to the same difficulties that arise in the 'beetle in the box' example. Thus the whole line of argument that rests on the assumption that, 'You cannot have my experience,' is in some sense a necessary truth, is a result of falling into a grammatical trap and is in error.

I would suggest that the error in the object and designation view of sensations, and of experiences in general, arises from taking a sentence like, 'I have an experience,' too seriously. It isn't at all problematic when we talk about experiences as if they were discrete 'things' in ordinary language, but when philosophers take such usages seriously in attempts to describe how

language works, then they find themselves faced with all the problems that Wittgenstein pointed out. The way to avoid these problems, I suggest, is to look at the notion of experience and at the role of language in the differentiation of experience. This I will attempt. For my purposes here I will not observe any distinction between our experience of the external world and our experience of our inner life, sensations, feelings, thoughts, etc. This is not because of any prejudice against such distinctions, but because my remarks here are relevent to all experience. When I discussed perception I said that we must admit that our perceptual consciousness has content prior to conceptualisation. But I also said that this content is not appearence as opposed to reality, the basic content of perceptual consciousness is the world. Put this way it sounds odd, but in fact I am saying nothing more than that in perceptual consciousness we have (usually) direct access to the external world. Our basic experience of the external world is organized, through conceptualization, so that we recognise what we are (eg.) seeing as being a tree, a table, or whatever. Similarly I would argue that our experience in general has content, we experience feelings, pain etc. directly and recognising 'this' sensation as pain is recognising 'this' experience as one which is properly to be subsumed under the concept heading 'pain.' Unless we admit a basic experiential content in the case of sensations and feelings we end up being unable to distinguish between pain behaviour indulged in by an actor who is simply following a script and someone who naturally is in pain. It should be noted, however, that there is an important difference between perception of the external world and feeling a pain. In the former case there is something independant which we are experiencing. In the case of pain there is not a 'something' which we experience and which is to be correctly labelled as a pain - rather there is an experience which we are having which is painful. There is nothing wrong with talking about experiencing pain

so long as we do not take this form of words too seriously, but philosophically speaking we should insist on talking instead of painful experience.

So we must not say that before an individual can use the word 'pain' he must recognise a clear and distinct sensation which the word 'pain' names. Wittgenstein talks about pain-language replacing natural pain-behaviour. He further points out that if certain sorts of behaviour were not normally associated with feeling pain then the public concept of pain could not get off the ground. Put together these two elements suggest that certain aspects of our experience cause certain physical reactions in us. Our public concept is made possible only by the similarity of those reactions, but more is written in to our concept of pain than the fact of pain behaviour. What is written in is the assumption that the behaviour is a direct and immediate result of our experience. If that is not the case then the person exhibiting the pain behaviour is shamming or acting and is not in pain at all.

I have already argued in this section that our ability to learn new ways of classifying (and hence differentiating) our experience presupposes that there are basic ways in which we classify experience without having learned to do so. What I want to suggest is that Wittgenstein is right in saying that a sensation (or an experience) is not a something if by that he means that there are not necessarily clear and distinct things which form the content of our awareness and which we name with words. My contention is that experience is best understood as being an undifferentiated content of awareness which we differentiate by means of classification into similarity classes according to our interests and purposes. Natural pain behaviour is caused by our experience. When our 'stream of experience' impinges on our awareness in certain ways we usually react with natural pain behaviour, although this need not be so in all cases (there is almost

certainly room for a mechanistic account somewhere here in terms of an event of which we are aware which also triggers certain reflexes, tears for instance.) We come, after any time, to be able to pick out those occassions when our experience is of the kind which causes those reactions which constitute natural pain behaviour. When, for instance, we touch something hot we can withdraw before we build up a great pain and we also recognise the sensation of pain when we fail to withdraw soon enough. In such ways our experience becomes differentiated and we learn to recognize our sensations.

The main point to make here is that before we can differentiate our experience in new ways we must be able to differentiate it in certain basic ways. If we did not have basic ways of classifying experience, then there would be no way of acquiring a system of classification. The only way to increase the complexity of our system of classifying experience is by becoming aware that experience of 'this' sort is associated with experience of another sort. If a baby remained unaware of any distinction between the different ways it reacted to different experience, then it could not begin to differentiate its experience. And the baby can only distinguish between its reactions if it can distinguish between its experiences, for it experiences (sometimes at least) its reactions. This apparant paradox is already familiar ground. It says quite simply that if at any point a human being can make no distinctions between sorts of experience, then he will never be able to do so. Thus the only way to explain the fact that we do distinguish between aspects of our experience and that our ways of differentiating experience become more complex through learning is either by recourse to some sort of doctrine of recollection, against which I have already argued, or else by saying that human beings have an innate tendancy to classify their experience in certain ways.

In this way I have reached a position from which I can

agree with Wittgenstein that a sensation is neither a something nor a nothing. Sensation is a category of experience, a category built up by a language which distinguishes between our experience of the external world and our experience of the 'inner' world of the mind. We recognise our own sensations only in the sense that we recognise those occassions when our experiences are properly to be subsumed under sensation concepts. But nevertheless there remains an 'inner' component to sensation, a basic content of awareness which we differentiate through concept application.

This account is useful, I believe, in that it clarifies the position of the 'inner' element of experience with respect to questions about its essential privacy. We differentiate our experience by means of public concepts, concepts which define what it is that we are experiencing. There is no problem with linking experience to language as there is no gap between them - in acquiring language we acquire a system of classification which differentiates and attaches significance to various aspects of experience.

In perception we have direct access to a world which we then proceed to make sense of in terms of public conceptual frameworks. More generally our experiences have a basic content but we don't differentiate that content and then learn language, in learning a language we learn to differentiate that content in various ways. Our shared conceptual frameworks structure our experience, but they don't generate it, so we must postulate a given content of awareness which is what our conceptual frameworks differentiate and classify.

There is no gap between experience and language because linguistically defined concepts structure experience. They direct our attention towards and attach significance to various aspects of what is given to our awareness. I do not believe, however, that all our concepts are linguistically defined. Just as our ability to learn to differentiate

experience in new ways is dependant upon our having an innate tendency to classify experience in certain basic ways, I believe that our ability to acquire language depends on a certain amount of pre-linguistic conceptual development. This belief, and objections to it, will be looked at in my next two sections.

Concepts and Language

At this point I can start pulling together the strands of my argument in order to support my assertion (in my initial discussion of the pre-linguistic child) that we must accept that pre-linguistic children can recognise their mothers (although not as mothers in the linguistically defined sense). And the sense of recognition which must explain the reactions of such children is, I shall try to show, a non-mechanistic sense. This will bring me up against an objection. For a non-mechanistic sense of recognition brings in talk of people according with logically arbitrary sets of rules of classification. And such rules are precisely what concepts have been seen as by many theorists. Thus when I talk about pre-linguistic children recognising, in a mentalistic sense, I am talking in terms of pre-linguistic concepts. One objection to this is precisely Cooper's objection to talk of innate knowledge of the rules of language. Pre-linguistic children don't know the rules of language, so how can we talk of them possessing concepts? My reply will be exactly what it was in the last section, that we are mistaken if we put language into the controlling position in the mind/language relationship. I don't need to repeat the problems created by making this mistake, I have only just finished pointing them out. But I do have to give an alternative account of what a concept is, and this I will try to do.

But before I embark on this task, I must first deal with another objection. This objection would be to say that although I have rejected mechanistic accounts of the behaviour of language users, on the grounds that such accounts cannot deal with the facts of awareness, I have not yet made any case for the view that pre-linguistic children must be regarded as being aware. Thus I have not shown that we need to give any more than a mechanistic

account of the behaviour of pre-linguistic children. I will now try to show that we do need to accept children as being aware prior to their acquisition of language.

The main grounds for our having to regard pre-linguistic children as aware come straight from my discussion of the private language argument in the previous section. In awareness we are aware of something, our awareness has content. Now the view that we can give a perfectly adequate characterisation of a pre-linguistic child in mechanistic terms, but that such a characterisation will be inadequate after language acquisition sounds odd to start with. But if we ignore that oddness for a while and look more closely, this view can be seen to be the view against which I have already argued. On this view awareness, including amongst other things, the content of perceptual consciousness, follow on the acquisition of language. But in that case, as I have already argued, the acquisition of language itself could only be explained on mechanistic lines, and awareness cannot arise on the basis of purely mechanistic processes, processes which can be completely characterised in mechanistic terms. This view arises from the argument that the ascription of content to experience can only be achieved by following the rules of language. And insofar as that theory is incorrect, something I have argued already, this view is mistaken. The content of perceptual experience is something that must, if my arguments on perception were not wholly misguided, be 'given,' that must be immediate (ie. unconceptualised) in our awareness. It is further the case that the organisation of this content, something which involves the making of what I have called 'sameness Judgements,' cannot be wholly language dependant either. If it were, then we would have to adopt either a mechanistic view, or else the view that we have, in some sense, innate

knowledge of the rules of language. And I rejected, after discussion, both these views as untenable.

What seems to be the case is that if language acquisition is to occur in the way that it does, and if language users are aware, then the pre-linguistic child must achieve awareness and some degree of ability to organise the content of its perceptual awareness before it can acquire language. This is to say that such children do experience a world of 'things' and can, to some extent, come to recognise those 'things' as things with special significance. And this means that pre-linguistic children can acquire concepts, although it is not to say that these concepts are completely specifiable in terms of the concepts embodied in public modes of language.

Before I can adopt this account of pre-linguistic concepts however, I must discuss a strong objection to any talk of concept possession in the absence of language. In what I have written so far I have regarded sorting into logically arbitrary classes as being an essential element in the process of conceptualisation, subsumption of experience under concept headings. In other words I have regarded concepts as being primarily to do with the differentiation of experience, using the word 'experience' in a sense that implies awareness. I have not claimed that all discriminatory abilities, in all species, imply concept possession. Some psychologists do this, using the notion of ' concept' in a sense which is compatible with mechanistic modes of explanation. In terms of this usage the phrase "having the ability to discriminate" does the same job as "possessing concepts." I, on the other hand, regard concepts as being to do with the sorting or differentiation of the content of our awareness, thus using the term in a sense which is incompatible with mechanistic modes of explanation. Thus I regard the term, "concept possession" as having, in part, the same import as, "having the ability to differentiate and classify the content of awareness."

We sort the 'things' of experiences into classes by virtue of their having, in relevent respects, a shared significance for us.

Some might object to the stipulative way in which I have given this account of what conceptualisation is. But I don't think there would be any relevence in my attempting to give an analysis of the notion of a concept to try and show that my meaning is, in some sense, the primary sense of the notion of a concept. The psychologist's notion of a concept is not quite as subtle as that which I wish to use, perhaps through a lack of understanding of the philosophical considerations, through not grasping the logical distinction between a machine and an aware being, but, perhaps, because such fine distinctions are of no relevence to him. After my discussion of mechanistic modes of explanation, of perception, and of the private language argument, my reasons for wanting to use the sense of 'concept' I have outlined should be fairly obvious. As for my giving a justification for having made a move such as this, the overt stipulation of the meaning of a crucial term, I cannot give one in a few lines. My belief, and hope, is that looking at concepts in this way will be useful in that it will make the facts about people more intelligible. If I am right this will become clear in the course of this whole work. And if what I write is made more successful, in terms of explaining those phenomena in which I am interested, by taking concepts to be to do with classifying the content of our experience, then the use of this sense of the word will have been justified.

There are people, however, who would want to say that the notion of a concept that I want to use is not a useful one. Cooper, in an article, "Grammar and the Possession of Concepts," (proc. Phil. of Ed. Soc. of G.B. July 1973), has argued against a view that discriminatory abilities imply concept possession in young children. He has argued that in the absence of an adequate usage of the logico-syntactic apparatus of language there is no justification for talking in terms of concept possession. As this is an

important issue I will discuss Cooper's article at some length.

Cooper calls his central contention the 'nothing to know thesis.' He writes (p.205):

> "This is the claim that it makes no sense to ascribe concept-possession to young children. It is not, as the sceptic holds, that children have the concepts, only we do not know which ones. Rather there is nothing to know, since no concepts are possessed."

Cooper's "young children" include not only what I have called pre-linguistic children, he also uses the term to refer to children whose language is at the 'telegraphic' level, whose language,"...lacks a certain 'logico-syntactic' apparatus." (p.204). The sceptical argument with which he disagrees is the sort of argument with which I am agreeing when I say that the fact that the pre-linguistic child can recognise its mother presupposes that it has some concept of its mother, but not necessarily the linguistically defined concept of a mother.

Cooper's sceptical theory owes much to the work of W.V. Quine, who has pointed out that when a young child says, 'Doggie' we have no justification for ascribing to it our linguistically defined concept of a dog. For, given the lack of grammar in a childs linguistic utterences, we cannot identify 'doggie' as a concrete general noun (which is what 'dog' is). 'Doggie' might be nearer in meaning to 'doggish,' an adjective, or 'doghood,' an abstract noun, or to a number of other words. And, as interpretations of what the child is saying, all three of the examples I have given (and some others) are pragmatically adequate, in that the child's verbal (and non - verbal) behaviour offers no clue to which of them is correct. Only if the child uses a language possessing a sophisticated logico-syntactic apparatus can we distinguish what should be the correct interpretation (in terms of the language we

use) of the word 'doggie.' Cooper points out that the concept of a dog is a physical object concept, whereas that of doghood has to do with the 'stuff' of which dogs are made. Thus to interpret 'doggie' in alternative ways is to ascribe different concepts to the child using the word. Hence the sceptical thesis says that until a language user's use of language becomes sufficiently sophisticated we can't know what concepts he's using.

Cooper's next move is to say:

> "...if the child's world of concepts is thought of as hidden behind, and unrevealed through, his speech and behaviour, the adult's world of concepts should be similarly thought of. Hence one should be totally sceptical about whether one's best friend has the concept of dog."

He then makes use of the private language argument, as it applies to languages (rather than sensations) by saying that our understanding of our own speech depends on our being able to understand the speech of others. What is odd about the above quotation from Cooper's article is that it overlooks the reasons for being sceptical about what concepts a young child possesses. I will use an analogy to try and show what I mean. Consider this example. One day I leave the staff room to go and buy an apple to go with my lunchtime sandwiches. Another member of staff asks me to get her an apple and yet another colleague asks me to buy him a banana. I go to the shop and buy the fruit which costs 30p. altogether. But when I get back to the staff room I realise that I've forgotten to ask how much each item cost. I can make up an equation for two variables that reads:
$2a + b = 30p.$ (a=apple, b=banana)
but I can't work out the price of either an apple or a banana. Possible solutions are $a = 1$, $b = 28$, or $a = 2$, $b = 24$, and I know that the most the apples can cost is 15p. in which case the banana cost nothing and similarly,

if the apples were a free gift the banana cost 30p. Thus I can state the following constraints: $0 \leqslant a \leqslant 15$ and $0 \leqslant b \leqslant 30$, but, because $2a + b = 30$ gives me insufficient information I cannot tell the price of apples or bananas. If, however, someone else in the staffroom tells me that he has just been to the same shop where he bought one apple and one banana at a cost of 21p. I now have a system of two equations in two unknowns (a and b) which is solvable. I have:

$2a + b = 30$ (from my shopping spree)

and

$a + b = 21$ (from my colleague's)

The only possible solution to this system of equations is $a = 9$ and $b = 12$. Thus I know how much money to collect from the people I bought fruit for.

What is important here is that initially the information available to me meant I only knew about the limits within which the prices of apples and bananas fell. Not until I had more information could I work out exactly what these prices were. In any problem where the solution is some specification (be it of prices or of concepts), that solution can only be given if the information we have constrains the possible solutions adequately. If our problem is to accurately locate a radio beacon, then the information given to us by a directional reading taken at one spot is inadequate, we need two readings taken at different locations to pin-point the beacon. If the info we possess is inadequate for the solution of our problem then we need more information, we don't give up hope of solution.

The problem of specifying a pre-linguistic child's concepts is, I believe, insoluble, not because there are no concepts, but because our observations of the child's verbal activities give us insufficient information about the way the child organises its experience. And there is

the added difficulty that the child's ways of organising his experience will be altered by acquiring a language which embodies a particular way of looking at the world of experience. Thus, by the time the child's use of language is sufficiently sophisticated for the ascription of particular concepts to be possible, his conceptual framework will have been structured by the fact of language acquisition.

My contention is that, in fact, the young child's world of concepts is unrevealed through his sppech and behaviour precisely because his speech lacks the sort of logico-syntactic structure that would constrain the possible pragmatically adequate interpretations of his words to an extent that would be sufficient for there to be only one pragmatically adequate interpretation. And the fact that adults use language in a sophisticated manner is what allows us to ascribe particular concepts to them.

I think that Cooper has fallen into the same trap as those philosophers who have argued that, in principle, anyone who knows that P (P a proposition) must be able to justify his knowledge in some sort of public demonstration. His interest in the problem of specifying what concepts people possess has led him to write specifiability into the notion of a concept. I will come to his reasons for doing so a little later in this section.

In giving this objection to Cooper's attack on what he calls the sceptical thesis I have left unmentioned the basic difference between his notion of what concepts are and my own. This difference is basically that Cooper regards concepts as wholly linguistic entities whereas I do not, for reasons which follow from my discussion of the private language argument.

Cooper writes:

"For, crudely speaking, employing a different conceptual scheme is nothing but employing a different logico-syntactic apparatus. The weird and wonderful worlds of thought ascribed by a Whorf or a Sapir to exotic natives may, so to speak, be nothing but alternative logico-syntaxes. And to have no conceptual scheme may be nothing but lacking a logico-syntactic apparatus."

This remark is expanded on in Cooper's book, "Philosophy and the Nature of Language," where (ch.5) He discusses the Sapir/Whorf hypothesis concerning the effect of language on the conception of reality. On p.116 he writes:

"We have to admit, I believe, that there can be no way of identifying what a man's concepts are except in terms of the language he uses. Conceptual ability is essentially linguistic ability. If this is so, we can no longer speak of there being a correlation between language and conceptualisation..."

What I find odd about this quote is the insertion of the sentence, "Conceptual ability is essentially linguistic ability." I agree with Cooper that it is true that behavioural observations other than observations of linguistic behaviour cannot tell us very much about what particular concepts anyone possesses. And this means that we can't ascribe particular concepts to anyone without using the evidence of what he says. And it follows from this that talk of a correlation between language and concepts is empty. For, if we ascribe the particular concept C to someone on the basis of his making statements $S_1,...S_n$ we cannot then turn round and say that there is a correlation between those who possess C and those who made statements equivalent to $S_1,...S_n$. To talk about correlation we must first find a way of identifying thoses who possess the particular concept C which is independant of the way we identify those who make statements of a certain sort and

this is what is not possible. But this doesn't involve or entail an assertion like, "Conceptual ability is essentially linguistic ability."

Cooper's tendency to assert a logical link between concepts and language is manifested again on p. 120 of 'Philosophy and the Nature of Language.' He writes:

> "We have seen that it is highly misleading to speak of there being a correlation between linguistic differences and conceptual differences among societies. That implies that language and conceptualisation are distinct phenomena. In fact, though, concept differences consist in linguistic differences. More precisely, I have argued, concept differences consist in (1) the fact that certain words belong to different groups in different societies, and (2) the fact that the explanatory analogies employed in different societies may be very different."

Here again I must suggest that the assertion, "..concept differences consist in linguistic differences," is both unjustified and unecessary to Cooper's thesis. What Cooper argued in the section preceeding this quote was that the existence or not of such things as tensed verbs or ways of talking about time and space that have direct correspondance to the parallel English language games doesn't automatically reveal conceptual difficulties. His arguments can be summed up, if rather too simply, by saying that even if the grammatical structures of two languages are very different, conceptual differences need not exist. Conceptual differences are only revealed by looking at the ways in which the language games work. If, for instance, there existed a language in which sensations were regarded as things in the world so that 'pain' and 'blue' were both properties of objects, then there would be conceptual differences.

But again, it seems to me, such conclusions are not at all dependant upon conceptualisation being wholly language dependant. I accept that linguistically defined concepts are by far the most important part of our conceptual frameworks, but that doesn't mean that concepts are

necessarily linguistic entities, or that language must, as a logical necessity, play a part in concept formation.

The real disagreement between Cooper and myself, however, is that I believe that a classificatory notion of a concept is a useful one to hold. In 'Grammar and the Possession of Concepts,' he writes:

> "What I would urge is that concept-possession, so understood, is neither a fruitful, well motivated, nor explanatory notion. It simply does not provide us with an understanding of how we employ the notion in discussion about human intelligence and behaviour."

He goes on to point out that an ability to discriminate does not give any information about what concepts the person with that ability possesses. At this point he refers to examples. First he uses an example in which a person lacking any concept of sex is taught to sort out between male and female chicks. Here the fact that the person discriminates between male and female chicks tells us nothing about the concepts he possesses. It is further the case, apparently that, in real life, chick-sexers learn to perform their sorting of male and female without being able to explain how they do it. Now if Cooper had disposed of the sceptical theory this example would be problematic. But, if I am right, the sceptical thesis (which I would prefer not to call sceptical, but will, in deference to Cooper's prior usage of the term) remains tenable. Thus I can say that chick-sexers, asexual or otherwise, possess concepts that they cannot specify linguistically and that we cannot specify because of lack of (linguistic) evidence. In saying this I am not saying that discrimination implies concept possession, but that discrimination of objects of experience, by conscious agents, implies concept possession.

I have suggested that Cooper's problem is that he wants a notion of a concept which has specifiability built into it. In other words he only wants to ascribe particular concepts to people, he wants to rule out the possibility of saying

that some concept is possessed, but we can't know what it is. It is possible that this desire stems from his interest in education and an interest in the problem of assesment. He attempts, in this paper, to rule out the possibility that someone might possess a concept but that others might not be able to tell that he possesses it. Which, if that were the case, would reassure teachers that they couldn't accidentally mis-assess their pupils, for if the pupil couldn't manifest his concept-possession verbally, then he wouldn't possess the concept. I, on the other hand, believe that if one of my pupils possesses a skill, then I should ascribe concepts to him, even if he can't give a linguistic account of what he is doing. In other words I don't believe that concepts are only involved in linguistic skills, I believe that there are non-linguistic skills that involve concept possession, for instance the skills of the musician and the (visual) artist. Cooper's language orientated bias is manifested when he writes (p.218):

"...I am urging that a fruitful notion of concept be understood in terms of the sophisticated linguistic systems employed by certain subjects."

But there are oddities in his account. He talks (p.216) about conceptual mistakes, and says that there is a difference between mistakes which arise from misapplying concepts and those which arise from faulty perception. But perception involves an element of judgement, I think that much is clear, and what is the point of trying to separate the process of conceptualisation from the element of judgement in perception? It seems to me that Cooper's notion of a concept is decidedly odd. Concepts are not essentially to do with perception or with a conscious being's ability to differentiate and classify the content of his awareness. Cooper's concepts are essentially to do only with the ability to use language. He writes(p.218):

"To say X is able to discriminate between A's and B's because he has the concepts of A and B 'reduces to' X

is able to discriminate between A's and B's because he is able to discriminate between A's and B's."

And in saying this claims that the notion of a concept under the discriminatory view, is robbed of explanatory power. But under his account, "X has the concept of carburettor," reduces to something like, "X has the ability to use the word carburettor correctly within the relevant language game." All I have to say about this is that if I take my bike into a garage to have a malfunctioning carburettor seen to I want a mechanic who can put it right, not one who can converse for hours about the things. It might be the case that normally those who can put carburettors right can also talk for hours about them. But we've all met those who can talk for hours but can't actually do anything practical. And if I am put in contact with a highly skilled man who converses in monosyllabic grunts, I don't mind a bit. What I am trying to say here is that if concept acquisition is to do only with being able to talk using a sophisticated mode of language, then I, as a teacher, am not primarily interested in promoting concept acquisition (in this sense). If concept acquisition is to do with being able to make sense of some aspect of the world, then I am all for it. I believe, as I will argue later, that initiation into a particular mode of language may be the only way to acquire certain concepts. But I also believe that those concepts once acquired are useful only insofar as they make the world of experience more intelligible, and not insofar as they make people into sophisticated users of language. The view I am trying to establish here is that language is a tool, as are other symbol systems. Cooper's mistake, it seems to me, is that he puts language into the central position in his theorizing instead of people. It is people who formulate and use language in public endevours, and it is their interests and purposes that shape the course of human knowledge.

It may be that I am being over zealous in my attack on Cooper. He does not, in fact, explicitly identify concept possession with the use of particular forms of language. It is most likely that his thesis is that use of certain forms of language is a necessary condition for concept acquisition. But, in fact, most of his arguments seem to be for a different thesis: that use of certain forms of language is necessary for the ascription of particular concepts. This thesis would, if his attack on the sceptical argument and on the discriminatory notion of a concept were accepted, combine with those arguments to establish a conceptual link between language use and concept possession I have already given my reasons for rejecting Cooper's attack on the sceptical thesis.

As for Cooper's claim that a move towards a discriminatory view of what concepts are robs the notion of a concept of explanatory force, I both agree and disagree with him. What such a move does is take the discussion behind the notion of a concept. It takes us to the level of explaining what a concept is, what we mean by concept possession. We can no longer explain a discriminatory ability in terms of concept possession. But what we can do is to look at how discriminatory abilities are acquired. By 'discriminatory ability' I don't only mean things like being able to sex chicks. I mean the ability to distinguish and classify the content of awareness, this being a logical pre-requisite of being able to do things like sex chicks or sort letters. In the development of the discriminatory abilities (in the sense just given) of a conscious being, I suggest, there are three identifiable stages, two before, and one after the acquisition of language. I will now leave the discussion of Cooper's paper and look at these stages of conceptual development.

Before I do that, however, I should clarify what I mean by a discriminatory/classifiatory notion of a concept. It

might be thought that taking concept application as constitutive of 'things' in our experience and taking concepts to be involved in the classification of those 'things' are two different views of concepts. And as I have used both these views I might be thought guilty of a crucial inconsistency.But I think there is no inconsistency, merely the appearance of one.

It seems to me that it is wrong to think of concept application merely as a sort of inert pigeon-holing, a slapping on of labels. Rather the identification of some 'thing' as a 'thing' with particular significance is also a classification of the 'things' of experience. We classify the 'things' of our experience not only by the perceptual characteristics they have, but also by other significances they have for us. Dangerous animals and domestic animals is as much a classification as mammals, reptiles etc. Thus when I say that concepts are involved in classification this embodies the idea that concepts are what give significance to the 'things' given in experience. We classify things by their significance to us. This may seem a little vague at the moment, but will (I hope) become clearer when I begin to look at the problem of classifying signs. For now it will suffice to say that I take a statement like "P has a concept of X" (P a person, X an object of P's experience) to mean something like, "X's have some significance for P that leads him to classify them together." The discussion of how such significances are built up will be a central theme throughout much of the rest of this thesis.

The Conceptual Development of the Pre-linguistic Child.

In my discussion of perception I argued that in perceptual consciousness we have direct access to the world, and in my discussion of the private language argument I showed that the making of sameness judgements cannot be taken to be necessarily language dependant. Taken together these two assertions open up the way for a further contention - that it is a matter of (contingent) fact that we just do tend to classify our experience in certain basic ways, that there is a naturalistic basis to human modes of conceptualisation. The specification of this innate basis is more a matter for psychologists than philosophers, but I can speculate that things like hunger, warmth and even the proximity of other human beings may well be naturally significant for us. It also seems that we must be able to pick out, in vision, object from ground (or at least distinguish object+ground from ground) without learning to do so, as if the world given in perceptual consciousness was not a world of distinct 'things' (in a theoretically neutral sense of 'thing') we could not acquire language in the way we do. And we must possess some similar innate ability with respect to sounds as here again an ability to separate sounds would make it impossible for us to even begin to pick out words from background noise. Bruner, in work that I will discuss more fully in a later section, has described a natural tendancy in babies to follow their mothers' direction of gaze and suggests that this is an element in the naturalistic basis for the shared reference that makes ostensive definition possible. But in order to do this the child must be able to distinguish its mother from her surroundings and also must be able to pick out the object its mother is looking at. The ability to acquire language, then, presupposes a naturalistic basis to conceptualisation, a basis which establishes some experiences as naturally significant and which provides

a basis for shared reference. Some maturation is necessary for these abilities to appear, but they cannot be learned. They provide the basis for learning, without there being some innate basis for the differentiation of our experience in terms of significance, a shared language would be impossible. This is the basement level of conceptualisation, the innate abilities which human beings must share if a public language is to be a possibility.

The second level of conceptual development is that at which the 'things' given in our perceptual experience of the world gain significance by association with naturally significant states. As a speculative illustration, without usurping the empirical role of developmental psychologists, I suggest that at this level food gains significance for the child as 'that-which-satisfies-hunger' and that his mother gains part of her significance for the child as 'that-object-of-experience-which-gives-food.' This example is certainly simplistic, a psychologist would have much more to say here, but all I am concerned to say, as a philosopher, is that the child could only begin to attach significance to the world as a result of 'things-in-the-world' impinging on him and 'webs of significance' being built up through the association of those 'things' with the naturally significant states which they cause or relieve and with each other. At this level, I suggest, the child may well not distinguish between its mother (in terms of her agency) and a door which causes pain when collided with. It seems possible, given the animism which young children mainfest in their early language use (talking to dolls, attributing agency to inanimate objects etc.), that the assumption of agency is natural and that recognising some 'things' as inanimate objects is learned later- this again is a psychological issue rather than one for philosophy.

The child learns to recognise its mother as an object with special significance at this stage. At first

the child seems to pass through a stage at which any person, or person-like thing is expected to be a source of the food and comfort its mother brings. But it is clear that at some point during the pre-linguistic stage a child comes to recognise his mother as an individual insofar as he reacts in a special way to her appearance. This level is one at which the child's ability to discriminate between the objects of his experience in terms of their significance grows in complexity through interaction with the environment, both the physical world and the people around him.

At this point it is a good idea to refer back to Urmson's reminder that recognition does not necessarily involve either remembering the occassion upon which the 'thing' which is recognised was first encountered or identifying features which it has. I can recognise someone but not remember where from, and, more importantly, I can recognise people and objects without being able to give any description of them. Urmson gives an analysis of recognition that made it seem very language dependant, but was unable to rule out pre-verbal recognition. I would argue that even for language users recognition doesn't involve an element of 'verbalisability'. At the pre-linguistic level recognition appears as just something we can do. The classification involved is logically arbitrary, but this does not imply that it is established conventionally. Insofar as the law of gravity is a matter of contingent fact it too is logically arbitrary. But nobody would suggest that <u>it</u> was established conventionally.

My main contention is that in interaction with his environment a baby builds up a primitive 'understanding' of different things in terms of their relations with naturally significant states. This rather crude conceptual framework cannot be specified linguistically but its existence is evinced by the child's responding differently as different 'things' are (eg.) introduced into its field of vision.

In perceptual consciousness the child is given access to a world of different things. This must be so for if at any point the child could not separate (eg.) his teddy bear from its surroundings he could never learn to do so. Even if the toy's proximity caused(in some sense) a feeling of comfort, say, the child would not be aware of something in the world associated with the feeling, so thenaturally significant response to the world could not provide a basis for giving the world significance. But initially the things-in-the-world of which the child is perceptually aware are undifferentiated in the sense that none of them have any significance for him. It is precisely through impinging on the child, eliciting naturally significant responses, becoming associated with the generation or relief of naturally significant states, sensations, feelings and emotions, that things in the world gain significance, become classed together in terms of the sorts of inner responses they elicit. Were there no such natural responses to experience, no naturally significant states, the child could not begin classifying the things given in perception as things of different sorts.

So it must be a matter of natural (ie. unlearned) fact that the child has access to the world of 'things' in perceptual experience and that the world elicits (passive) responses from the child in terms of inner states which just are significant for him. Unless this much is innate the child could never acquire language. And the world to which the child has access must be the public world. If the child didn't see his teddy bear when his mother holds it up and says 'Teddy' then ostensive definition wouldn't work. Similarly if the child saw a pattern of several colours where his mother sees uniform red then he could never acquire the ability to use colour language by ostension. It might be thought odd that my examples of innate perceptual abilities are mostly to do with vision, after all congenitally blind people manage to acquire language (as do some who are born deaf).

Vision is clearly an important sense, and one which plays an important part in language acquisition in sighted children (as Bruner shows), but it is not essential. Similarly hearing is important for normal children. What seems to be the case is that perceptually handicapped children have to use other strategies to make up, to some extent, for the deficiency which constitutes their handicap. A blind child must depend on touch and a deaf child must depend on sight (writing, lip reading) and touch (the use of a balloon against the lips as a means of letting the child experience phonemes). But such cases don't undermine my argument, they simply require me to acknowledge that we have senses other than sight and that we must have a certain amount of innate organisation of things like touch and hearing (and probably even smell). I find it hard to even speculate on what might be involved here, but it must be the case that each sense must be innately organised in certain ways. It seems very plausible to suggest that shared reference for a blind child and his mother would be achieved most straightforwardly simply by putting the object referred to in the child's hands, though it would be for a psychologist to say how 'touch recognition' works. It also seems likely that for a blind person the first steps in language would be limited to what can be touched directly and that many referring words (eg. clouds, red..) would have to be learned later in terms of their roles within language games as, for an unsighted person, the potential range of words that can be taught by ostension is severely limited. But it still remains a fact that language acquisition occurs and that this presupposes much about the child. In particular it presupposes a public world to which the child's perception has access as much as an adult. The child doesn't attach as much significance to that world, cannot pick out

as much significant detail, but the world is there for a child as much as for a fully fledged language using adult and must be if he is to acquire language in the way we do.

Learning begins when the child begins to classify the 'things' of perceptual experience in terms of their associations with naturally significant states and with each other. This is the second level of conceptualisation in which 'webs' of significance are built up, centred on the child, the world acquiring significance in terms of its relationship with the child. At this level people, particularly the mother (in general the caretaker), gain special significance for the child because of their importance as feeders, nappy changers, comforters, etc., although it may well be that other human beings are naturally significant for babies - this again is an issue for empirical research by psychologists, not one which philosophy can deal with a priori. In this stage different 'things', including different sorts of behaviour from his mother, gain significance in terms of being nice (ie. something the child seeks to elicit) or nasty (something the child seeks to avoid). This sort of distinction is crucial in moving towards initiation into publicly defined areas of conduct with conventionally defined rules for appropriateness of behaviour as such crude distinctions give us a basis for reward and punishment which are central to the process of socialisation in young children.

During his pre-linguistic conceptual development it may well be the case that there is a period during which a child does not recognise individuals as discrete things enduring through time. The child's mother, for instance, does not have special significance from the word go as Shaffer and Emerson's work shows. The mother gains significance only after a time, at first any person is reacted to in similar ways. Even when the child begins to show attachment to specific people it may be that

the child reacts to them, on different occassions, as if what we see as the same person is a different member of the same class. Piaget has shown that, for young children, out of sight is literally out of mind. There is a stage at which a watch with which the child is playing is not looked for when it is hidden under the blanket on which the child is seated. Only at a later stage does the child look for the watch, and only then can we assume that the child regards things as enduring through time. Until this stage is reached the child may not conceive of the same (from our point of view) 'thing' as any more than another member of the same class. But insofar as there comes a stage when the relevant response is elicited only on the reappearance of the same thing (the same watch, the child's mother) we must admit that recognition of individual's does occur in pre-linguistic children. And this is so even if the child manifests no behaviour which evinces an understanding of things enduring through time even when not within his field of vision.

What is lacking here is not the ability to recognise individuals but rather knowledge of physical objects. The child can recognise individuals insofar as the class of things which elicits particular responses has (from our point of view) only one member, but as not yet realised that if he sees something at time t_0 and again at time t_1 (t_1 later than t_0), then it was somewhere between those times. This understanding of things as enduring through time is not present even during the early stages of language use and it may be that it is learned with language, as a presupposition built into language which is justified simply by the fact that we know that even if we can't see the pen with which we were writing a few minutes ago it must be somewhere. That this is a fact is demonstrated by the fact that looking for the pen usually results in our finding it, even if it did fall in the settee. But such knowledge is not necessary for the acquisition of language. The discrimination of 'things' of various sorts and of certain individuals,

those that are important for the child, is a necessary pre-requisite for language acquisition even if the childs understanding of the nature of those 'things' is crude compared to the public modes of understanding we acquire through language.

Language brings with it a better understanding of the world, better in the sense that viewing the world in terms of the public conceptual frameworks built into language makes it more comprehensible, more efficiently handable. But the child must acquire a pre-linguistic 'understanding' of the world in order for it to be possible to initiate him into language. And this pre-linguistic development in conceptual framework is not culture-specific. Insofar as a child belongs to one race (genetically speaking) and born into one culture can be transplanted, reared by parents of another race in another culture (as with the Vietnamese babies adopted by American couples at the end of that war), and can acquire the language of his new home, the naturalistic basis for language acquisition must be common to all humanity.

The most important point I have tried to make here is that a certain amount of conceptual development through learning is a necessary pre-requisite of language acquisition. If a child could not learn to classify the 'things' of which he is perceptually aware in some ways, particularly in learning to recognise important individuals and the significance of certain of the vocal noises those individuals make, then language acquisition could never get off the ground. Repetition is an important element in language acquisition, and if the child didn't make certain basic sameness judgements as a matter of natural fact, then no new sameness judgements could be made. Unless (this is a speculative illustration again) the child recognised being fed as significant it could not come to recognise its mother saying (eg) 'Dindins,' as a sign of impending food and

could not later come to use 'Dindins' as a way of getting food. This, again, is overly simplistic and later discussion will give a more subtle account of what goes on in language acquisition.

For now, though, I am concerned with arguing that a certain amount of pre-linguistic conceptualisation is a necessary pre-requisite for the occurance of language acquisition. Talk of pre-linguistic concepts is not empty. Further, as my arguments in earlier discussion have shown, talk of concepts is to do with the ability of conscious beings to distinguish, in terms of their significance, between experiences, both of their perceptual experience of the world and their experience of inner states, emotions, feelings and sensations. Mechanistic accounts of 'conceptualisation' just are inadequate.

I have now dealt with two of the three levels of conceptualisation. The third is that of linguistically formulated concepts. It is at this level that concepts have become physical object concepts rather than formal concepts etc. What I say here will be incomplete as I will confine myself to a brief outline of some of the ways language works. This is because this part of my thesis has been designed to establish, through the consideration of the acquisition of language, that the organisation of mind is not wholly a function of language. That language, and other symbol systems, play a part in the organisation of mind, our ways of looking, is something I accept whole heartedly, and in the rest of what I write the explication of this process will be dealt with at length. But I also hold that language and other symbols are essentially tools. We can be given a plane, say, and taught to use it, and the nature of the plane will dictate the skills we acquire, what we will be able to do with it. But this constraint is not absolute. If we want to do something that our plane won't allow us to do we can actually manufacture something that will do the job. I believe that our relation

with publicly defined symbol systems is similar, they constrain what we can say and what we can find out about the world by directing our attention to certain features of our experience. But again, this constraint is not absolute, if there is something we wish to express, some relation we wish to know more about, we can forge new symbolic forms as tools by means of which we can further our understanding.

Put briefly, my understanding of the role of language in concept formation is that once we have acquired a particular language, our concepts are 'fixed' (but not immutably) by the grammar of that language. The grammatical form of a language, the tacitly formulated rules which govern the use and meaning of words (and the relation between use and meaning will be discussed later), embody assumptions. And the assumptions embodied in different languages are not the same.

Cooper, in his chapter on the Sapir/Wharf hypothesis in 'Philosophy and the Nature of Language,' has argued convincingly that grammatical differences between languages don't establish conceptual differences between the cultures using those languages. But he has also pointed out that, by looking at the structure of the various language games a culture uses, conceptual differences can be found. The Hopi Indians of North America, for instance, have no language games which directly correspond to our ways of talking about space and time. Instead of talking about the future the Hopi talk in terms of what can be hoped for, and the past is what cannot be hoped for. Thus the Hopi can talk in terms of time, but for them time is a mental concept. Similarly the Hopi have no 'pure' spatial concepts, instead they talk about distance in terms of the complexity and magnitude of the tasks needed to span it.

The point here is that language is theory laden. Linguistic concepts define a way of looking at the world, and different languages embody different world views. But this doesn't mean that translation is impossible. Although the English language is structured in a way which makes it easier to talk of space and time in one particular way, it is possible, if rather labourious, to make the language express the Hopi way of looking. Put simply it seems that human beings tend to conceive the world in the way which is easiest to express using the language of the culture into which they are born. But this fact does not imply that an individual's native language acts as a straight-jacket on his mind. One of Wittgenstein's main point is Philosophical Investigations is that we should be very wary of the grammatical traps our native language sets for us. His whole discussion of sensations shows that by following grammatical rules we arrive at an untenable view of what sensation is. Thus although language embodies assumptions about the world the reflexivity of language, our ability to use language to discuss language, enables us to 'dig out' and question those presuppositions, and hence we can change language, arrive at new ways of looking at the world which can replace older established ones.

The power of language lies precisely in the fact that it enables new statements about objects of experience to be made, and understood, independantly of our having direct experience of them. Thus I can know a great deal about, say, New York, without ever having been there. Similarly new concepts, new ways of classifying experience, can be formulated linguistically and then tested against experience to see if they fit the world. Our experience of language itself can enable us to acquire new concepts, new ways of looking. Philosophy and literature are examples of this.

Language then, is a very powerful tool. But so too, I believe, are other symbolic forms - painting and sculpture and music. And all of these are symbolic forms, I will argue, and are also manifestations of mind. They are created by people with shared interests and they are created with the aim of expressing and clarifying our experience of the world in which we live, a world which includes people who are manipulaters of publicly defined symbol systems.

In this first part of my thesis I have looked at a great deal of philosophy of mind in order to try and give a useful picture of language acquisition. What I have concluded is that if language is acquired in the way it appears to be, then we cannot keep on looking at concept acquisition, the development of mind, as though it is the same thing as the acquisition of linguistic skills. The acquisition of sophisticated linguistic ability is an important way of acquiring concepts. But it is not the only way of acquiring concepts. If it were, then there would be no way of acquiring language. And similar arguements, I think it is fairly obvious, apply to the problem of initiation into other symbol systems.

My conclusion is that the relation between mind and language (or any other symbol system) is complex, but that mind is prior. We must accept, I suggest, that symbol systems are tools of people, are manifestations of mind formulated to further understanding of those aspects of the world that people find important for whatever reasons.

Signs and Stimuli

In this section I will attempt to establish a useful distinction between signs and stimuli. More precisely I will try to set up such a distinction based upon what I have already written. There will be an element of stipulation in the distinction I make, but I believe this to be unavoidable. I will try to show that the use of the word 'stimulus', and related terms, in ordinary language and its specialist use by psychologists are both rather imprecise. This imprecision in usage, I think, could be dangerously confusing. I will stipulate in an effort to avoid confusion and my stipulation will be justified insofar as a possible confusion is avoided.

For some time now, within the British Analytic tradition, conceptual analysis has been regarded as the appropriate tool by which meanings can be established, thus avoiding the stipulative definition of key terms. It seems to me, however, that both the ordinary language and psychological useage of the term 'stimulus' is so imprecise as to make the picking out of primary usages (as opposed to secondary or parasitic usages) nothing more than a stipulative exercise in disguise. I choose, therefore, to stipulate overtly and to justify my stipulation in terms of usefulness. I will try to distinguish between signs and stimuli in a way that is useful in that it minimises the risk of confusion of the sort that arises when the difference between mechanistic and mentalistic modes of explanation is misunderstood. I have, of course, already discussed the results of such confusion at some length.

In ordinary language there is nothing at all wrong with an expression like, "a stimulating conversation," or with a sentence like, "Reading Philosophical Investigations acted as the stimulus for my interest

in the philosophy of language." The conversation would be understood has having started off the speaker on some new line(s) of thought, and it would be understood that my reading of Philosophical Investigations started off my interest in the philosophy of language. I think that to understand the word 'stimulus' in ordinary language as meaning whatever started off some line of thought, interest, or course of action is quite proper. This interpretation of stimulus is neither particularly interesting, nor is it very informative from a philosophical point of view. It carries with it no theoretical implications of the sort a philosopher would wish to discover. But that doesn't mean that using the word in this way is, or should be, regarded as improper in the context of everyday conversation. Our use of language need only be as precise as the context demands, and in ordinary language, as opposed to specialist modes of language used in the systematic disciplines, we have little need to use language in a pendantic and rigorously precise manner. That the meaning of the word 'stimulus' as used in ordinary language is vague is of no great importance to us as ordinary language users; it is sufficiently precise for our everyday purposes.

To say that our usage of the word 'stimulus' in ordinary language is imprecise is not to make a damning accusation. But to say that a psychologist's use of the same word is imprecise <u>is</u> to make such an accusation. 'Stimulus'is not only a word in ordinary language, it is also an important technical term in psychology. And demands are properly to be made on the useage of technical terms which are improper when made on the usages of ordinary language. In other words there are good reasons for demanding rigorous precision in the use of the technical terms of a systematic discipline, demands which would be mere pedantry if made on ordinary language usage. In later discussion I will argue that such demands are only proper when the specialist modes of language are designed to be informative. Precise definition

of terms is useful in terms of a desire to express information unambiguously. In other contexts ambiguity is desirable - it is an important element in aesthetic expression. Insofar as psychological language is designed first and foremost to be informative, to say that psychologists are imprecise in their use of the word 'stimulus' as a technical term is to accuse them of giving imprecise information.

In my discussion of stimulus/response explanations of behaviour I argued that the relation between stimulus and response stood in need of explanation in terms of something 'inner'. I also said that for many behaviourist psychologists this 'inner' component is regarded as physiological, they seek to maintain their position by making their theories essentially mechanistic. This sort of approach is common in psychological literature, the first section of B.A. Farrell's article, 'A Psychological Look at some problems of perception,' (R.I.P. Lectures '68-69), gives a survey of work done on the psychology of perception by experimental psychologists and physiologists. Dennet's book, 'Content and Consciousness' is, of course, an attempt to give philosophical respectability to the attempted reduction of psychology to physiology. But many behaviourist psychologists have not made any move towards adopting an account of this 'inner' component, physiological or otherwise. They still insist on trying to explain behaviour as resulting from an organism being exposed to a 'thing-in-the-world' which is the stimulus. Rachlin, on p.174 of 'Introduction to Modern Behaviourism' seems to take this line when he writes:

> "It is arguable whether the concepts of excitation and inhibition are necessary to mediate between environment and behaviour. As behaviourists, we would prefer to relate stimuli such as the green and white keys directly to the organism's behaviour."

Now I am confident that such theorists are wrong, that by refusing to take account of the 'inner' factor they open

their accounts to fatal objections, and I have given some of the possible objections. But until these psychologists make their theoretical choices it is difficult to say what they mean by stimulus. There are two main ways in which the 'inner' component in the stimulus/response relation could be characterized.

The first way is that which has proved most popular with those American Behaviourists who have accepted the need to characterize the 'inner' component. This is to adopt the view that an organism (human or otherwise) is properly to be characterized as nothing more than a physiological mechanism. On this view the stimulus is a thing-in-the-world which when it impinges upon the organism, causes (mechanistically) an initial stimulation which, after being processed through the circuitry of the organisms nervous system (central and peripheral) causes, again mechanistically, certain gross movements. This is a view for which identification of the stimulus depends on prior identification of the 'caused' behaviour. It is also a view which has no way of dealing with awareness. I have already argued against this view and rejected it as being inadequate for a characterization of human behaviour. But it is a view which is held and the meaning of the term 'stimulus', as used by proponents of this view is sufficiently clear for objections to be raised against mechanistic accounts.

Although I have rejected this approach as an inadequate explanation of human behaviour in general, it is an adequate method of characterizing such things as the knee jerk reflex. It seems to me that the use of the term 'stimulus' is best restricted to such contexts.

In what I have already written I have used the word 'stimulus' as if it has mechanistic connotations and will continue to so so. In other words, for the sake of lucidity, I will use the word 'stimulus' to denote some event which produces a specifiable response from an

organism mechanistically, something which has a natural causal efficacy by virtue of the physiological nature of the responding organism.

I believe this usage of the term 'stimulus' to be in keeping with the modern psychological usage insofar as that usage has been established by psychologists who have adopted a mechanistic view of the organism involved in a stimulus/response relation. But, as I have pointed out, not all psychologists who would describe themselves as behaviourists have made this move.

This brings me to the second possible move for those behaviourists needing to give an account of the 'inner' factor involved in the stimulus/response relation. Such a psychologist could choose to regard a stimulus as an object of experience and could say that the animal under observation behaves, or acts, in particular ways because he perceives the stimulus. This theory would be causal in much the same way as the causal theory of knowledge although this would not necessarily be mechanistic causality (and, could not be if my arguments against mechanism have any force).

It would be as well for me to say something here about the notion of mechanistic causation and about an alternative concept of causality involving agency. Mechanistic causality is concerned exclusively with the characterisation of events in extensional terms. A system is characterized in terms of discrete events, the interfaces between those events being explained by the notion of mechanistic causality. Thus a billiard ball moving over a surface strikes a second ball at rest and causes it to move, and the results of such a collision are amenable to description in mathematical terms. The stationary ball begins to move because it is struck by the moving ball and this 'because' is causal. Causation is an assumption built into a way of looking. We see ball A moving, then ball A striking the stationary ball B, then

we see ball B moving, and we write in that ball B moves because ball A strikes it. Next we construct a mathematical model to describe the causation, one that predicts the movement of B after being struck by A, and if we are successful in producing such a model then we take our assumption of mechanistic causality to be justified. This notion of causation is basically a collision model. An event impinges upon the world and other events are caused. Mechanism, as a theory of human behaviour, attempts to explain all events, including those normally thought of as resulting from human action, in terms of this 'collision' model of causality and hence fully describable in terms of physics (or more precisely, mechanics).

An alternative model of causality is one which is designed to deal with the actions of agents and which, because it has awareness written into it, is not amenable topurely existentional description. In a sentence like, 'I went downstairs because I heard the 'phone ring,' the 'because' again can be thought of as causal. But here the extensional characterization of the events will not give a useful story. We have to include reference to the individual involved being aware, of recognising part of the content of his perceptual awareness as being the ringing of the 'phone and of his going to answer the 'phone for some reason. Nobody has to answer a 'phone and frequently people don't.

When dealing with conscious agents we have to take into account such things as their reasons for acting as they do. If an answer-phone device is rigged up it will go into motion when the 'phone rings, because the 'phone rings, because its physical nature is such that the electrical impulses of the ringing 'phone switch it on - this <u>is</u> mechanistic causality. But with people there is the fact of their agency which 'sits between' events which they become aware of and the actions they perform so that even when there is a normal course of action, such as answering a 'phone that rings, there is a possibility

that there will be reasons why that normal course of action should not be taken. In such contexts talk of stimuli as if they have natural causal efficacy (in a mechanistic sense) is inappropriate, as I have argued already.

The use of the word 'stimulus' in accounts of human behaviour seems decidedly odd. It would seem better to discard the collision-model of causality and say simply that the person acts in such and such a way because the state of affairs he perceives has a certain significance for him. And this significance may or may not have been learned (although it most probably has). Thus the word 'stimulus', if its use were insisted upon, would mean something like, 'something that has significance for somebody' (this will be discussed further in later sections) And the word used by philosophers from Pierce to Merleau Ponty to denote something which has significance for somebody is 'sign.' This is the usage I intend to adopt. But even so we can still talk of causality in the context of signs, but it is a causality which involves more than the natural causal efficacy of events in an extensional sense. This notion of causality involves reference to the awareness and agency of individuals. In this sense event (E) caused a person's (P) action (A) only in the sense that P's awareness of E under some description (accurate or not) constitutes all or part of P's reasons for performing A.

In summary, the distinction I intend to adopt tacitly is as follows: a stimulus is something which causes certain specifiable motions in an organism by virtue of the nature of an organism as a physiological mechanism. It has a natural causal efficacy in the production of those events. A sign, on the other hand, is object of perceptual awareness which has significance for somebody. In particular contexts people may tend to act in certain ways because they perceive particular signs, but there is no necessity about this. In subsequent sections I will say much more about signs. They are, after all, a central concern of this thesis.

Signs.

In 1897 Peirce wrote:

> "A sign, or representation, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the interpretant of the first sign. The sign stands for something, its object. It stands for that object, not in all respects, but in reference to a sort of idea, which I have called the ground of the representamen."

We have here a tri-partite relation between a sign, its object (ie. what it denotes) and the interpretant which is, according to Peirce, some sort of mental entity. The interpretant is a problematic entity, it is some sort of mental sign or a mental image of the actual sign. It is precisely the sort of artefact that Ryle (in 'Concept of Mind') pictures as sitting quietly in the 'museum' of the mind waiting to be viewed by the 'ghost-in-the-machine'. As such the interpretant, as a postulate, has no explanatory power. It simply doesn't say anything about how signs can have significance for people, it merely pushes the problem of significance back into the problem of how the mental artefact can have significance and constitutes the first step in a well known infinite regression.

Similarly Peirce's notion that the significance of a sign is that it stands for something, its object, is also problematic. In 1910 he wrote:

> "The sign can only represent the object and tell about it. It cannot furnish acquaintance with or recognition of that Object; for that is what is meant in this volume by the Object of a sign; namely that with which it presupposes an acquaintance in order to convey some further information concerning it. No doubt there will be readers who will say they cannot comprehend this. They think a Sign need not relate to anything otherwise known, and can make neither head nor tail of the statement that every sign must relate to such an object. But if there be anything that conveys information and yet has absolutely no relation no reference to anything with which the person to whom it conveys the

> information has, when he comprehends that information, the slightest acquaintance, direct or indirect - and a very strange sort of information that would be - the vehicle of that sort of information is not, in this volume, called a Sign." (p.100)

It isn't easy to get at what Peirce means by 'acquaintance' here, particularly as he talks about the possibility of acquaintance being indirect. But it seems clear that, for Peirce, the significance of the sign lies in its relation to the object it denotes and depends upon the sign's 'reader' being acquainted with the object denoted. And, perhaps, this acquaintance with the object can be either by direct perception or indirect, via verbal description, although Peirce doesn't make this clear.

Nowhere in his account, however, does Peirce deal with the significance of logical operations like 'and' or 'not'. And in general his account seems to be adaptable, in the context of language, only to the meaning of words, not sentences. There is some justification, I think, for the suggestion that Peirce's account is too much tied up with a meaning as reference approach, although the reference is via mind, the sign/object link being mediated by the interpretant. What is lacking is a grasp of richness of language, of how we do many things besides referring and passing on information by linguistic means.

Peirce also seems to have tended towards Russell's mistake of confusing referential statements with existential statements. Also in 1910 he wrote:

> "The Objects - for a Sign may have any number of them - may each be a single known existing thing or a thing believed formerly to have existed, or expected to exist, or a collection of such things, or a known quality or relation or fact, which single Object may be a collection, or whole of parts, or it may have some other mode of being, such as some act permitted where being does not prevent its negation from being equally permitted, or something of a general nature desired, required, or invariably found under certain general circumstances." (p.101)

This passage suggest very strongly that the object denoted by a sign was seen by Peirce as existing or having existed or about to exist in some sense. In particular his remark about the objects of signs perhaps having, "..some other mode of being," suggests that he was committed to the view that the significance of a sign depends upon it being related, via the interpretant, to some state of affairs which has being, which is, ie. which in some sense exists. It may be, of course, that I am misinterpreting Peirce here. But, quite simply, I can imagine no other interpretation for his remarks. The problems arising from this sort of approach to the analysis of the significance of signs (ie. meaning) will be dealt with at length in later discussion.

It is difficult to say whether the weaknesses I have pointed out are, in fact, weaknesses in Peirce's conception or whether they are flaws which I have read in to his account. The interpretant is clearly a dangerous postulate and must be written out of my own account. Similarly I must not make the mistakes of confusing meaning with reference and of assuming that reference implies existence for reasons that will be dealt with later in some detail. But it is difficult to pin Peirce down on these latter two points, his account is none too clear on them. Each time he moves towards these views he seems to qualify them, to draw back. But I myself must avoid them completely and approach the analysis of signs in a different way. As a preliminary offering I will say that a sign is something that has significance for somebody. That significance may be that it refers to something (existent or not), but signs have other significances besides reference. Many of our linguistic utterences, for example, are involved with the expression of feelings. When someone curses after hitting his thumb with a hammer, he is using a sign, but that use is not to be understood in terms of reference. Similarly, logical operators create problems for referential views. 'Red' may well be analysable referentially, but 'not red' creates unsurmountable problems for this approach.

In later discussion I will attempt to deal with two main problems; that of giving a useful classification of types of sign and that of giving an account of the sorts of significance which signs have for us. But for now I want to draw attention to some general features of signs. This will, by making the nature of signs a little clearer, facilitate later discussion.

Nelson Goodman, in his book, 'Languages of Art', makes a distinction between a symbol and its inscription, which is to say that what we see (or hear) is the inscription. Thus 'dog' and 'DOG' are two different inscriptions of the same word (symbol), the spoken word being another form of inscription. I want to extend this description to cover all signs. I will use the word 'instance' and talk about the instances of a particular sign being what we perceive. This may sound like a quibble, but in fact it is a useful distinction to make.

If we take an example like, say, black clouds being a sign of rain, the sign/instance distinction can be both explained and used to reach useful conclusions. The first remark to be made must be that, "Black clouds are a sign of rain," is a rather crude approach towards a meteorological theory. It states that an event of one kind, the appearance of clouds of a certain sort, is often followed by an event of another kind, rain. To describe it as a meteorological theory is going too far, it is not a finding which results from systematic enquiry (and meteorology is a systematic discipline) it is a rule of thumb and it is not particularly reliable, but it is reliable enough to warrant taking a raincoat or an umbrella when going out when such clouds are about. But the clouds which we recognise as signs of rain are not of one specifiable colour or of a specifiable shape. We expect rain when we see a sky of uniform grey, we also expect rain when we see a mass of almost-black cumulus rolling towards us across a blue sky. My point is that we don't recognise only one sort of cloud as a potential bringer of rain. We recognise easily distinguishable types of cloud formations

as belonging to the single class of rain cloud, just as we identify the word 'dog' whether it is printed, spoken out loud, or displayed in lights. This is to say that objects of experience which we have no difficulty in distinguishing from each other are nevertheless classified together as instances of the same sign, whether that sign be rain clouds or the word dog.

It is clear that this grouping together of very different things as instances of a sign cannot be explained in terms of similarities between the objects of experience themselves. Rather those things are grouped together by virtue of their having the same significance for us in some respect. In other words we should not make the mistake of generally identifying a sign with a thing of a certain sort (ie. having certain physical/experiential characteristics), although in some cases, for instance road signs, this is the case. In general we must regard a sign as being the class of objects of experience which are united by virtue of the fact that, in some respect, they have the same significance for us. And the members of the class which constitute the sign are the instances of the sign.

This formulation needs a little clarification. It should be apparent that the object of experience/sign correspondence will not be 1:1. The same object of experience might constitute an instance of more than one sign. A car's brake lights, when they go on, tell us that the car is braking. It need not be the case that, as the car brakes, red lights go on at the rear, but the conventions governing motor vehicles dictate that cars be built that way. At the same time that a car's brake lights act as a conventionally defined sign (ie. a symbol), their mere existence signifies something about the state of our technology, and for a visiting bug-eyed monster to gather information investigating the technology in domestic use on our world would constitute 'reading' such things as brake lights as signs of a quite different

sort. This suggests that signs should not be thought of as things-in-the-world. The instances of signs are 'in the world', but their status as instances of a particular sign (or signs) is dependant on the 'way of reading' being used, on the significance that is read into them by someone who is making use of a point of view. Here is not the place to go into how things acquire the significance for us that they have and how, when we recognise a thing as a member of a certain class of things, we also 'read into' it significance beyond what is immediate to our senses. I have already (in the section on perception) touched on this question and will come back to it later. For now all I want to observe is that the identification of an object of experience as an instance of a sign depends on the use of a way of looking at it.

The final question to be answered about signs here is that of whether a sign is a sign in some objective way or whether a sign is only a sign when it is being 'read,' by someone. It might be thought that, on an account like the one outlined here, to call something a sign, or an instance of a sign, is to say nothing more than that someone has just read a particular significance into it. This is a question that will only be dealt with fully when I discuss the subject of the significance of signs (ie. meaning) which I will be doing later. But I will attempt to give a brief outline of my ideas here.

The key notion for the notion of a sign is that of reading significance into objects of experience. This is to say that identifying an object of experience as an object of a certain sort is to identify it as an object with a particular significance. And that significance is built up through the relationship between particular objects of experience and the interests of human beings. This is simply a repetition of my point that a sign must be thought of as the class of its instances, those instances being classified together because, from some point of view, they have the same significance for us. Thus identifying something as a member of a particular

class of 'thing' is to recognise it as having a particular significance. And we often identify things visually which have functional significance, for instance we recognise a chair and hence (if we are right) know we can sit on it. The fact that something might be intended for a chair that doesn't look very chair-like is not very important. Absolute certainty about anything is unavailable in human life, but we are right often enough to justify our confidence in dealing with the world.

Now this identification of an object of experience as an object of a certain sort is what I have called, in earlier discussion, conceptualisation. And concepts are public. By 'public' here I mean 'interpersonal' and what I am saying is that the ways in which we classify the 'things' of our experience is not a matter of personal whim, but rather a matter of interpersonal agreement. At the linguistic level this agreement is ensured by the use of a common language between members of a form of life, and all languages embody ways of classifying objects of experience although there is not always a 1:1 correspondence between the classification systems of different languages. At the pre-linguistic level, psychologists (eg. Bruner, of whom more later) tell us that shared reference is gained through non-verbal communicative interaction. And, as I have already argued, that fact that we can come to share a language and communicate using it presupposes that human beings by their nature must find certain experiences naturally significant. At this level agreement is not conventional as in language, but rather it is a matter of genetic fact (and here genetic should not be taken has having connotations of the merely physiological or biochemical.)

What all this leads to is the fact that identifying signs depends on the use of an interpersonally established way of looking, a system of classification arrived at by people with shared interests. Thus, although people formulate these ways of looking, it is possible to talk

about particular ways of looking, for instance those of the systematic disciplines, without asking whether a particular person on a particular occassion made use of it. And if an object of experience, under a particular way of looking, would be read as a sign ofacertain sort, then it is perfectly reasonable to call it a sign of that sort without reference to whether or not people have read it as such. In other words the status of an object of experience as an instance of a particular sign depends upon its having a particular significance under some way of looking and not upon the question of whether this or that person in fact looked at it that way.

From here it follows that we can properly be said to inhabit a world of signs, signs defined by ways of looking built up by human beings. As our ways of looking become more sophisticated the world around us becomes more significant, more pregnant with meaning. It seems to me that one important aim of educators must be to make the world of experience more significant for our pupils, so that they see that the evidence of their senses has import which goes far beyond what is obvious. And further, we should surely make it clear that this ability to go beyond what is straight forwardly apparant is no mystical activity, but is a human activity, and one which takes many forms.

Bearing these remarks in mind I will now attempt to establish a useful classification of signs and then will go on to say more about the problem of how the world becomes a world of signs for us, how signs gain significance.

The classification of signs: Peirce's notions of icon, index and symbol.

The classification of signs into icons, indices and symbols is only one way which Peirce classified signs. Burks, in his article, 'Icon, Index and Symbol,'(Philosophy and Phenomenological Research, June 1949) refers, in a footnote, to work in which he and Weiss discuss no less than sixty six different classes of sign to be found in Peirce's writings. I have no space here to go into an in-depth discussion of Peirce's work on signs, and have no need to do so. I have already pointed out a number of difficulties with Peirce's conception of what a sign is, and a comprehensive account of his work would involve me in giving an extensive critique of his whole philosophy. His theory of signs is based on a very personal and idiosyncratic approach to philosophy which it would take a lot of work to examine fully. But I am not going to spend time on such an undertaking. The notions of icon, index and sign are the most important part of Peirce's philosophical legacy insofar as it is this way of classifying signs which his philosophical heir's have judged to be most useful. I intend to examine Peirce's account of each of these three signs in the light of my own discussion so far in order to see if there is anything in these categories which will prove useful for my purposes as a philosopher of education. To make things easier for myself I will discuss each category of signs separately and will begin by discussing the notion of a symbol.

(1) Symbol.

In 1903 Peirce wrote (I quote the Buchler article unless otherwise stated):

> "A symbol is a sign which refers to the Object it denotes by virtue of a law, usually an association of general ideas, which operates to cause the Symbol to be interpreted as referring to the Object."

In 1902 he had written:

> "A symbol is a sign which would lose the character which renders it a sign if there were no interpretant."

And still earlier, in 1893, he had written:

> "The symbol is connected with its object by virtue of the idea of a symbol - using mind, without which no such connection would exist."

These formulations still embody the weakness of Peirce's general definition of a sign (discussed earlier) particularly the maintenance of meaning-as-reference and of the interpretant as a mental 'thing'of some sort. I therefore cannot simply adopt this view of symbols, I must re-work it in order to avoid problems that have been elucidated since Peirce's day. First I must reject the idea that the significance of a sign must always be that it refers to some object and also any reference to an interpretant. Thus I end up with something like: "A symbol is a sign which gains its significance by virtue of being used as a sign." In other words, for a symbol, the instances of the sign gain their (symbolic) significance by convention, they are defined as being instances of the sign. The instances of the sign, or to use Goodman's terminology, the inscriptions of the symbol, have the significance which defines them as instances/inscriptions by virtue of a decision having been made, either tacitly or overtly, that they should have that significance. Without such a convention, established, as Peirce saw, by people who are users of symbols, the particular inscriptions could not gain the significance they have. This is to say that the word 'dog' is only a word insofar as language users use it in certain ways, for instance to refer to a certain class of objects of experience. For some being who failed to grasp the conventional nature of language the word 'dog' could not gain the significance it has for language users, it would remain a squiggle on a page, or a noise.

An essential feature of a symbol (necessary but not sufficient) is that it is used. A rain cloud or a flash of lightening is not a symbol although such things are signs. It is further the case that such naturally occuring signs can be used, for instance the makers of horror films make (over)abundant use of a great many things like thunderstorms, dark shadows, cobwebs etc. Such things are signs but not symbols as their significance arises from facts about the relationships between people and the world and not from convention. It is arguable, of course, whether we naturally have a negative response to things like cobwebs, but in a case like fear of the dark (or at least apprehensiveness of it) an explanation in terms of an inability to see and hence an increased vulnerability has much more plausibilty than any story about its being a social convention.

A further point here is that by 'use' here I don't necessarily mean use in communication, although, as I will try to show in later discussion, it is in communicative interaction that we acquire language, the most important symbol system. The use I have in mind here is use in expression, that is in putting information or feeling into a publicly observable form. Briefly, expression involves choosing inscriptions of symbols which have, within our form of life, the significance we wish to make public and producing those inscriptions. As Wittgenstein made clear, and as I have said already, the idea of an inscription having appropriate significance depends upon its being defined interpersonally as having that significance. Thus any expression is, in principle, comprehensible to other members of the appropriate form of life insofar as it is comprehensible to its author.

Expression plays a part in communication, but does not constitute communication. A communicative act must embody an expressive act (in the sense outlined above) and must also involve communicative intent. This is over simplified and a,more detailed account of communication must be left

until later. But the central point remains that although it is necessary for a symbol to be used that use is not necessarily a use in communication. For instance, someone who curses when he stubs his toe may not have any communicative intent at all in cursing, he may simply be giving vent to the pain he experiences.

There is one question about symbols that I have left untouched so far. I have said that the instances of symbols gain the significance which they have as symbols by convention. But this isn't quite clear enough. The question remaining is that of whether the instance has its symbolic significance only by virtue of convention or whether some object of experience which has significance in some non-conventional way can properly be said to be used symbolically in some context.

As an example of what I mean I offer the following example. Consider the case of some ancient king who kept lions chained at the base of his throne. The problem would be that of whether it would be proper to say that those lions were a symbol of the king's power. Similarly consider the lion-skin robe which is the badge of the Masai warrior. To become a warrior a young Masai must go out with his spear and shield and kill a lion. It is the skin of the lion he has killed that the Masai warrior wears as the badge of his rank. To kill a lion with a spear must take a lot of nerve and skill. So anybody who had done it might properly be described as a brave man. And, in ordinary useage, we might say that the lion-skin robe of the Masai warrior is symbolic of his bravery.

The problem with talk of symbols in such contexts is that these symbols could be said to attain their significance not by convention, but because lions are powerful and ferocious beasts and because the ability to tame such animals, or to kill them armed only with spear and shield is quite an achievement. Thus the man who

manages such tasks is a man to be respected.

But this line of argument doesn't tell us much about the status of the chained lions or the lion-skin robe as signs. Further it is the case that the chained lions would be very likely to have been well fed and hence would have spent most of the time sleeping rather than being ferocious. And the Masai warrior's robe would be likely to become moth-eaten and worn after a few years. And yet both retain their significance, the former as a sign of the king's power and the latter as the badge of a warrior, a sign of the warrior's bravery.

The important feature in the use of such signs is selectivity. Not everything that is true of lions in general is relevant to the significance of the chained lions or the lion-skin robe. Besides being, at times, ferocious and dangerous animals, lions are lazy, sleepy beasts, but this fact is overlooked in the above contexts. In other words the significance of the lion in these contexts is governed by conventions about what facts about lions are to be taken as relevant. Thus, I suggest, it is proper to say that, in such contexts the lion is being used as a symbol.

This leads to a dichotomy in the notion of a symbol. First there is what I will call the pure symbol for which the significance of the instances of the symbol is purely a matter of convention. In principle anything could be counted as an instance of such a symbol if a decision, either tacit or overt, was made to that effect. The other class of symbol consists of iconic symbols for which the instances of the symbol are not arbitrary. Each instance of such a symbol must be describable, as an object of experience, in a particular way, and it is this description which constitutes the significance of the symbol. The instances of such a symbol may be describable in many other ways. But their significance as instances of that particular symbol is dependant only on the particular description that convention rules to be relevant in the context.

It is also worth pointing out that this notion of describability is not always dependant on fact. For instance the description of cows as holy under the Hindu religion and the use of the snake as a symbol of wisdom in Chinese mythology (and also, I am informed, in the Bible) seem to have nothing to do with the observable characteristics of those animals. This suggests that these uses of the cow and the snake are as pure symbols.On the other hand the use of a piece of paper of the correct dimensions as a pattern for a pane of glass is iconic as the significance of the pattern is dependant upon a description of it in terms of linear dimensions and not in other terms.

Justification for my adoption of the term 'iconic symbol' for this latter class of symbol will be given in my discussion of Peirce's notion of an icon which will follow the next section which is a discussion of indices.

(11) Index.

In 1903 Peirce wrote:

> "An Index is a sign which refers to the Object that it denotes by virtue of being really affected by that Object."

In 1902, in Baldwin's Dictionary of Philosophy and Psychology, he had written:

> "An Index is a sign which would, at once, lose the character which makes it a sign if its object were removed, but would not lose that character if there were no interpretant."

And earlier, in 1895, he had written:

> "Psychologically, the action of indices depends upon association by contiguity, and not upon association by resemblance or upon intellectual operations."

As in the case of symbols, Peirce's account embodies a meaning-as-reference approach and still talks about the interpretant of a sign, which he took to be a mental sign. The 'interpretant', insofar as it is a mental entity in the museum of the mind must be eliminated from any account I adopt, for reasons given in earlier discussion. The meaning-as-reference approach, which is Peirce's general approach to the significance of signs, still causes problems here. It seems to have been Peirce's view that the identifying criterion of an index is that it indicates. He included sundials and clocks in one list of indices (see the Buchler article 3.C) because they indicate the time of day. But he also calls a bullet hole an index because it is caused by the passage of the bullett, thus being, "...really affected by that object." And, of course, in 1895 the relation between index and object was understood in a more general way, as arising from contiguity, the question of a causal connection, which I take 'really affected' to imply, not arising.

The first point to make is although it may be a necessary condition that a sign must refer in order to be an index, this cannot be a sufficient criterion. The name 'Wittgenstein' refers to a person, but it is a symbol, its function as a name is a matter of convention.

The second point here is that Peirce, at different times, approached the classification of signs in different ways. The main thread in his discussion of indices seems to have been the attempt to define them through the nature of the sign/object link. But in identifying indices as signs that indicate he was involved in trying to classify signs in terms of their function. This latter move, I think, is a source of confusion. Signs are used for many purposes by human beings. Symbols can be defined as referring, but also, like 'and' 'but' etc. can serve as logical operators, not referring to anything, but significant in that they modify the meaning of a sentence. Peirce saw that the words of language have many functions, but instead of realising that he was defining indices in a way that conflicted with his way of defining symbols, he ploughed on and made a number of odd statements, for instance, that personal pronouns are indices (see the Burks article). In discussing symbols I said that being used for expression is a necessary but not sufficient criterion for the identification of a symbol. A baby crying is an expression, and an expression which, according to psychological research, mothers can learn to interpret in certain broad ways (Ricks 1971 - referred to on P10 of Bruner's 'Entry into Early Language: a spiral curriculum'). But we would not, therefore, jump to the conclusion that such babies were using symbols, any more than we would call a dog's snarl a symbol although we might interpret it as a warning to stay clear. Thus a classification of signs in terms of function would cut across the class of symbols, and I do not want to fragment that class in such a way. I thing that a classification of signs in terms of

function, although possible, would not be a very useful approach in educational terms. It is my view, as I have already said, that each specialist mode of language is a tool. It is also clear that language in general is symbolic in the sense I have already outlined. Thus I am slowly working my way towards characterising education as a process of initiation into various ways of symbolically representing the world of experience, ways which increase our understanding of that world. For this purpose a functional characterisation of signs is not particularly useful as it would cut across and obscure a distinction which is very important. This distinction is that between animals that can only acquire knowledge at first hand and those that can acquire knowledge indirectly. This dividing line is the same as that between symbol using animals and the rest, but only so long as symbols are defined in the way I have adopted. The transmission of knowledge through symbolic representation is something only humans, amongst the creatures of this planet, are capable of. (Although recent experiments with chimpanzees suggest that we might be able to extend the community of symbol-users to include some other primates, and work with dolphins is throwing up some puzzling results.) It is not the only use to which we put symbols, but it is a very very important one.

Thus I am not interested in following up the line of Peirce's thought that led him to think of indices as things which indicate. I am more interested in the approach which led him to characterise the index/object linkage as one of, 'being really affected' or else contiguity. In the case of something like black clouds being a sign of rain there is a (mechanistically) caused relation between the appearance of certain sorts of cloud and the occurence of rain. Meteorologists are involved in studying the causal mechanisms involved in weather systems. But this should not be allowed to mislead us into thinking that such causal mechanisms are relevant to the nature of the sign. Talk of causal mechanisms is

a mode of explanation. To say that clouds are made up of water vapour and that in the right conditions that water vapour condenses and falls as rain is to explain the mechanisms of rain fall. But it does not explain how it came about the people came to understand that some clouds are rain clouds whilst others are not. This can only be explained in terms of a frequent (not necessarily constant) conjunction of events. The appearance of clouds of certain sorts often preceeds rainfall. To note such a fact is to realise that the appearance of such clouds is a sign of impending rainfall.

Knowledge of causal mechanisms may help us to see what states of affairs are signs of other states of affairs, but this doesn't mean that understanding a state of affairs as a sign is dependant on such knowledge. This may be the case in some instances, for instance the reading of a pH meter tells the chemist much about the substance he is testing. But although knowledge of causal mechanisms may give us a better understanding of what aspects of a state of affairs are crucial to its reliability as a sign, and although such knowledge may well reveal as signs things which were never understood as signs of that sort before, such knowledge is not essential for signs to function as signs. Constant, or at least frequent conjunction of events or states of affairs in general, is sufficient to enable one state of affairs to act as a sign of another. The operant notion here is that of correlation (although not in the technical sense used in statistics.)

If we notice that an event of one sort is followed by an event of another sort, like rain clouds preceeding rain, then we come to regard the first event as a sign of the later event. But this temporal order is not necessary. A bullet hole, when correctly identified, tells whoever identified it that a bullet was found earlier. Any reader of police-procedural novels (eg. Ed McBain's 87th. Precinct novels) knows that forensic and ballistic experts can project backwards in time by making tests on dead bodies and bullets to indicate with a high degree of probability what sort of events must have taken

place.

Such signs are indices, but all indices are not of equal standing. What makes an object of experience a sign for some other object of experience is a frequent conjunction, not necessarily constant, but sufficiently frequent to make the incidence of one without the other an unusual occurance. And when I say 'object of experience' Iam using 'object' in its grammatical sense. So I do not believe that an index must refer to a physical object. Thus if experiences of one sort are often associated with experiences of another sort then we tend to notice this association and the occurance of one of the events leads us to expect the occurance of the other. Or, retrospectively if, under some way of looking at the world of experience, event B normally follows event A, and we see event B occuring, we assume that event A has occured even if we didn't experience it.

This is where explanations of the links between events or states of affairs comes in. In the sciences causal chains of events are described, which is to say that the scientists' experiences of the world are described in terms of causal chains of physical events. Once such a description, or a mode of description, is attained, the scientist can identify an isolated event as a member of a particular type of causal chain and, if he is right, can extrapolate and make statements about what preceeded that event or about what will follow it. In other words, he can say what he would have experienced if he had been in the right place earlier and what he will experience if he stays where he is (or moves to the appropriate location). The accuracy of his extrapolations will, of course, depend on whether he has the right theory, whether his characterisation of the causal chain is adequate for his purposes. And a scientists extrapolations need not be temporal It is also possible for scientists to discover a conjunction between logically unrelated descriptions of a state of affairs. Thus a seismologist can say that a description of

bedrock in terms of the way in which it transmits and reflects vibration has a correlation with a description of the rock in geological terms. Thus seismology is of use to oil prospectors.

But the fact that indices which are characterised in terms of physical events or states of affairs which are parts of causal chains, which are elements in physical mechanisms, are more reliably informative than those which are characterised less systematically is not to say anything about indices as indices. It is a matter of fact that the approaches of the systematic disciplines are better suited to their purposes, that systemisation is useful. But in the final analysis we should not make the mistake of writing the procedures of the physical sciences into our notion of an index. If I have lived in one neighbourhood for years and have always seen one of my neighbours with his dog, and never seen the dog without my neighbour, then I am fully justified in assuming that, if I see the dog, the neighbour is somewhere around. There is no logical certainty about this, but the probability is sufficiently high for the rational course to be to act on the assumption. The conjunction between my seeing the dog and seeing my neighbour occurs with sufficient frequency for me reasonably to take the appearance of the dog as a sign that my neighbour is in the vicinity. And this fact also means that I will tend to think of the man and his dog together, they will be linked in my mind.

I reject, then, Peirce's view that an index must be really affected by its object. Or, to update the formulation, I reject the view that the significance of an index consists in knowledge of a mechanistically causal connection between an index and its object. That there might be a causal link involved in the relation in some other sense of causality is, however, likely. If someone always associates his grandfather with steam trains <u>because</u> his grandfather was a railwayman, then the link is indexical, even if his knowledge of the link

between his grandfather and steam trains is indirect, it arose through his grandfather's physical involvement with the railways. But even if the underlined 'because' is understood causally, this is not mechanistic causality, and cannot be if my objection to mechanistic explanations of human experience are accepted.

Having 'talked round' the notion of an index I will now attempt to give some positive characterisation of indices. First I must reiterate that nothing is a sign in itself. Anything is an instance of a sign only insofar as there exists some point of view from which that objects gains significance. Thus the notion of an index comes down to the notion of what it is to 'read' the world indexically. To read the world symbolically is to grasp the significance of some object of experience which it has by virtue of the conventions governing its expressive use. To read the world indexically is to grasp the significance of some object of experience by virtue of its connection with other objects of experience and with ourselves. Thus an index indicates something to somebody by virtue of that individuals knowledge of the natural links between the object of experience which is the index and some other object of experience, some state of affairs or event or action (depending on the ontological point of view of the experience). And here 'natural' has no connotation other than non-conventional. Thus if I find a piece of paper with writing-like 'squiggles' on it on some desert island I can fairly take it as an index, as indicating the presence of some intelligent being on that island at an earlier time. And I can do this even if I cannot tell, because of my ignorance of the conventions governing the language used, what the 'writing' says.

Thus an object of experience is an instance of an index if and only if there is some way of looking under which that object of experience has significance which it has gained through its association with some other

object of experience and not conventionally. And here 'object of experience' must be taken to include anything that is a distinguishable entity from any point of view, including events, actions, feelings etc. 'Association' here must be taken to include spatial and temporal conjunction between logically unrelated descriptions. Thus an E.E.G. reading might serve as an index for us if, at some point, researchers manage to establish reasonable correlations between brain states and states of mind, although before this could happen psychologists would have to work on ways of characterising state of mind independantly of using E.E.G. readings of brain states.

Indices gain their significance by conjunction, in ways I have tried to describe at some length. In grasping that some object of experience is an instance of an index (or can be read that way) there is no reference to convention. There is only an association, by the 'reader' of 'this' object of experience with some other, an association built up through past experience with some other, an association built up through past experience of their conjunction or else knowledge of such association passed on by others.

This fits in well with Alston's point (in 'The Philosophy of Language') that reading a sign indexically involves no reference to any communicative intent which may lie behind the production of the sign. A pilot, seeing smoke rising from a desert island, can reasonably take it as a sign (an index) of human habitation. And the indexical reading of the smoke is justified whether the fire was made as a signal fire, in which case it was lit with communicative intent, or as a cooking fire in which case no communicative intent is involved. This is an important point for looking at what happens when language is acquired. The pre-linguistic child has no knowledge of the conventions governing the use of words prior to his experience of people speaking (or, to be more precise, making noises since the child, having no knowledge of the conventions of language, can have no

concept which is equivalent to the language user's concept of speaking). Thus the child must read the world indexically, he must note conjunctions between experiences, the experience of his mother (a significant, for the child, individual) making certain noises and the experience of being fed, say. At some point the child arrives at an understanding that, say, the noise his mother makes when she says, 'Din-dins' (or some other bit of baby-talk, which is basically the language mothers seem to favour when addressing young children) is a sign that food is on its way. It is at a later stage when babies go beyond indexical 'reading' of the world. Then they begin to say, 'Din-dins' themselves, firstly just as a noise to produce, but then as a sign which they use. Exactly what significance a child attaches to the first words they use is unspecifiable, as I have argued. Perhaps, initially for the child in my example, the word 'Din-dins' is just a sort of incantation, a noise which preceeds the appearance of food. Later, perhaps, the child gets the idea that somehow that noise has an effect which is the appearance of food. So long as this is true the child is still regarding the word indexically. But after a while the child comes to understand that the noise is to be used in communication, that it has no direct relation with food, but is understood by its mother as having something to do with food. When the child begins to make this leap, from mere association of objects of experience (making a noise and food appearing) to understanding that the noise is only associated with food by its mother and other people, then it is beginning to understand words as symbols.

It can be said, then, that both indices and some symbols denote objects of experience, they indicate those objects, the significance of those signs is derived from their association with other objects of experience. But the distinction between indices and those symbols which indicate is that in the case of the index the association is a matter of natural fact, things just happen to be that way, whereas in the case of referring-

symbols the association has arisen because of a tacit or overt decision which people have made to use them in that way. That the same object of experience could be 'read' as both index and symbol creates no problems, I have covered this point in my general discussion of signs. I will now go on to discuss my notion of an icon.

(111) Icons.

The notion of an Icon is, I believe, the most confused of the symbol/index/icon complex. In 1903 Peirce wrote:

> "An icon is a sign which refers to the object that it denotes merely by virtue of characters of its own, and which it possesses, just the same, whether any such Object actually exists or not. It is true that unless there is really such an Object, the Icon does not act as a sign; but this has nothing to do with its character as a sign."

Peirce's examples of icons are a mixed bunch. The least problematic is '...a lead pencil streak as representing a geometrical line.' Much more problematic are examples such as the following:

> " $a_1x + b_1y = n_1$,
>
> $a_2x + b_2y = n_2$.
>
> This is an icon, in that it makes quantities look alike which are in analogous relations to the problems. In fact, every algebraical equation is an icon, in so far as it exhibits, by means of the algebbraical signs (which are not in themselves icons), the relations of the quantities concerned."

Here again, I suggest, we find the same confusion arising that arose in Peirce's discussion of indices. The problem is that of whether we classify signs in terms of their functions or in terms of how they are grasped as signs. Peirce's tendancy to drift from one to the other of these ways of looking at signs led him to say that because personal pronouns indicate people (which, as Burks points out, is itself a problematic assertion) they are indices. And yet it is clear that personal pronouns, as elements in language have the significance they possess only by virtue of the conventions governing their use within a particular mode (or particular modes) of language. Thus, on the view which I have adopted, and

which Peirce adopted on some occassions, anything which functions as a word in a language is a symbol.

Peirce's confusion arose from his not grasping the fact that symbol systems can be made to do almost anything. Symbols can indicate and they can exhibit relations, in fact one way of characterising the activities of scientists is to say that they seek to create a symbol system the rules of which parallel observed regularities in the world. Part of the construction of such a symbol system would, of course, be the definition of concepts useful for the scientists task. The way the non-Euclidean geometries challenged the classical conception of space and opened the way for Einstein could be looked at in this way.

In not grasping the power of symbolisation, in the sense of conventionally defining signs, Peirce failed to realise that a classification of signs in terms of function could only obscure the importance of symbols. A classification of signs in terms of function can only fragment the category of symbols if the category is understood as consisting of conventionally defined signs. Thus symbols were dubbed as both indices and as icons by Peirce.

For my purposes in this thesis I believe it to be crucially important for me to demonstrate that it is the ability to symbolise, in the sense I adopted earlier, which is the 'extra something' that makes humanity the dominant life form on this planet. It is the ability to create and use signs for our own purposes that separates us from other species. Thus I have opted for giving a classification of signs in terms of how they are constituted rather than how they are used. And it is in terms of how an object of experience can come to be a sign that I will look at in the notion of an icon.

This is not to say that looking at signs in terms of

their function is not an important thing to do. When I discuss the questions of significance and of communication in more detail I will, in fact, be discussing, in part, the different sorts of things we can do with symbols. But for now I am interested in distinguishing the symbolic from the 'naturally' defined in signs. And hence I am interested in giving some account of what exactly it is that humans can do that other species (with some apparent exceptions eg. chimps) cannot. But that discussion must wait until after I have dealt more fully with the notion of an icon.

It should be fairly clear, from what I have already written in this section, that I cannot agree with Peirce that to say that an icon exhibits is to say very much about icons. Put more rigorously, I am prepared, for the sake of argument, to concede (for now) that a necessary feature of icons is that they exhibit certain features. But algebraic equations can be used to exhibit relations, and such explanations are, in my terms, symbolic. So I cannot accept the exhibiting of characteristics shared with other objects of experience as a sufficient criterion for something to be an icon.

In my first quote from Peirce at the beginning of this section he wrote that, "...unless there really is (such) an Object, the icon does not act as a sign; but this has nothing to do with its character as a sign." This is a decidedly odd assertion. I have already tried to show that we must understand a sign as being the class of its instances, the class being defined by those instances having a shared significance from some point of view. Unless I am very much mistaken this implies that any signs character as a sign depends on its having a particular significance (from some perpective). If, then, I identify something as an icon I am indentifying it (for the present at least) as something which denotes something else by virtue of shared characteristics. But if there is no 'something else', then there are no shared characteristics. In identifying anything, as I argued in my

section on perception, there is an element of risk, we are usually right, but sometimes we're wrong. So if I were to identify something as an icon, but there was nothing it denoted, I would be wrong. Whatever the thing was that I wrongly denoted, it could not be an icon.

But all this is not getting at the real weakness of the notion of an icon. Peirce's real problem is that any object of experience possesses any number of characteristics. And this is to say only that there exist any number of ways of looking at any object of experience, and each way of looking picks out identifying characteristics according to its interests. So the problem about 'reading' something as an icon is that it is necessary to pick out which characteristics of the thing being perceived are relevant to its function as a sign. For instance if I pick up a paint colour chart I know that I'm looking at the colour of each of the coloured rectangles, that their shape and the chart's layout are irrelevent to my purposes in looking at it. But if the managing director of a paint manufacturing company was to be given a proposed new chart by his advertising agency, then the reverse would be true. He wouldn't just be interested in the colours, he would look at the whole layout of the chart to see if it looked as though it might encourage customers to buy his firm's products.

Similarly if I take a piece of wool into a shop the assistant is likely to understand that I'm looking for wool to match. Here the colour, thickness and number of strands will be relevant to her understanding my sample as a sign of what I want, the length of my sample would not. If, on the other hand, I wanted a pane of glass for an oddly shaped window I might cut a piece of paper to the correct size and shape and take it to the glazier. In this case the colour and consistency of the paper would be treated as totally irrelevant, only the linear dimensions would be relevant to the task of cutting glass to the correct shape. And if I cut my pattern out

of wallpaper the glazier would pay no attention to the pattern, although the same piece of paper taken to a wallpaper shop would be 'read' as a sample of the sort of paper I wanted to buy for my walls.

The point of all this is that the 'reading' of an icon seems to involve not only the icon's possession of characteristics, but also an assumption by the 'reader' that only certain of these characteristics are relevant to the icon's functioning as a sign in a particular context. What is missing in Peirce's account is this reference to the reader's selection of characteristics. And the selection of relevant characteristics of the icon is something that depends on agreement about what is relevant in a particular context.

This is to say that for an icon to function in any way at all there must be public agreement about how they are to be used. Without such agreement there would be no reason for the woolshop assistant to do anything more than cut off a piece of wool of the same length as my sample from the first ball of wool that came to hand. And it would be quite reasonable for the glazier to explain to me that glass is clear and not patterned like my sample, or else to hand me a square piece of glass painted to match the pattern of the wallpaper.

Luckily, however, there are rules (sometimes only tacit - our knowledge of the rules of symbol systems will be discussed later) governing the way we use the sorts of descriptive aids I am discussing. The person in the woolshop and the glazier both know I want something 'like this' and furthermore each knows what 'like' means within their own working context. So the surrealistic events I have just described don't happen very often in real life. There are established conventions about how such things are 'read' and those conventions enable us to avoid confusion. But those conventions, accordance with which is necessary for the correct reading of icons, also identify icons as symbols (in the majority of cases at least).

Icon's, I wish to say, are a special kind of symbol. They are symbols which denote by sharing the characteristics of whatever it is they denote. But they are symbols in so far as they need not share all the features of what they denote and not all their features are features of what they denote. Thus the correct reading of an icon inextricably involves the reader according with the rules governing the use of that object of experience as an icon, rules which establish which characteristics of the object of experience are relevant to its role as an icon.

There are two main points to clear up before I am finished discussing the notion of an icon. In my formulation of what counts as an icon, or more accurately an iconic symbol. I have talked in terms of shared characteristics. This is rather vague. More precisely I should have talked in terms of descriptions which are true of both the icon and what it denotes or of a set of concepts that can properly be applied to both an icon and what is denoted. But Peirce didn't talk in these terms, he talked of an icon denoting "....merely by virtue of characters of its own..... which it possesses....", and he talked about icons exhibiting relations.

I have argued that icons are a special sort of symbol. But I haven't yet clarified the question of exactly what sort of symbol should be counted as iconic. In particular my discussion has left open the question of whether we should include such things as algebraic expressions as they are used by mathematical physicists in the class of iconic symbols. It seems to me that we should not. In any 'pure' symbol system the nature of the inscription as an object of experience is formally irrelevant to its function as a symbol, although in terms of practical 'useability' it is important that the inscription is not too difficult to make or to read. Thus I can define the letter 'A' to stand for the relation 'above' such that

x A y has the meaning, "x is above y", without implying the existence of anything (s) corresponding to the designations x and y. Mathematics involves the study of relations (not usually of such trivial ones), but the question of existence is irrelevent to the Mathematics. The mathematician deals in abstract notions, it is irrelevant to the mathematician (as mathematician) whether any object of experience fits into his theoretical framework. The use of the work of pure mathematicians by mathematical physicists is no easy step. The physicist cannot merely assume that a mathematical formulation parallels empirical data on the world of experience. He can assume this only as a working hypothesis, he must test his assumption against empirical data and must reject it if the data is inconsistent (in a statistical sense) with his hypothesis.

It is wrong, I think, to think of any purely symbolic representation (in the sense I have outlined) as exhibiting relations which obtain between objects of experience. Rather the relations which, by convention, obtain within the symbol system parallel those which obtain in the world of experience in the sense that extrapolations drawn from manipulations within the system do correlate with events in the world of experience. Of course a scientist's theories are not usually that reliable. Every researcher knows that no matter how successful a theory is in parallelling events in the world there is a high probability that one day an application of his theory will come up with wrong predictions. And then a new theory will be needed, this is how science progresses. Theory must be regarded as a way of enabling us to understand those aspects of the world which we have picked out as important. It is dangerous, for reasons I have already discussed, to think of theory as a description of a world more fundamentally 'real' than the world revealed to us in our everyday perceptual experience.

If I am right on this point, then there is no justification for saying that any purely symbolic representation exhibits, as opposed to describing, relations which it shares with the world of experience. And hence it is improper to regard algebraic equations as iconic in any sense. This suggests that we must look upon icons as symbols which denote by virtue of characteristics they possess, keeping in mind what I have already said about the necessity of knowing what characteristics are relevant to the icon's being an icon in any particular context. And as the mere possession of characteristics cannot tell us anything about how the icon denotes, then I think it is fair to assume that the relation between an icon and whatever it denotes must be understood in terms of characteristics shared by the icon and what it is that is denoted. Thus icons are a special kind of symbol for which the physical nature of the instance or inscription is important. They are symbols in so far as their significance depends upon convention. But unlike, for instance, the words of language, their significance derives not only from the conventions governing their use, but also from their precise physical nature.

This brings me to Peirce's notion of a hypoicon. I will not attempt to go into his theoretical definition of what counts as hypoicons, that would involve an unwarranted amount of discussion of Peirce's rather idiosyncratic metaphysics. But he did include paintings and diagrams in this class. I have little use for the notion of a hypoicon in my present endeavour, but I think it is fairly clear that paintings don't come anywhere near my category of iconic symbols. Nelson Goodman, in 'Languages of Art,' argues very convincingly that the 'resemblance' of, say, a portrait to the object it portrays is mediated by conventions which are a cultural variable - our conventions differ from those of ancient Egypt for example. And it is also clear that the correspondance between a person and his portrait in terms of linear dimensions, colouring and almost all other

physical characteristics is none too precise. We recognise someone from a painting much more easily than from a verbal or written description, but, it seems to me, a painting is nearer to a poem than to a life-size hologram in terms of sharing characteristics with the object it denotes, and hence should not be thought of as a paradigm of iconic symbolism.

Diagrams, on the other hand, do seem, in some cases, to come nearer to being icons. A blue print, for instance, is not merely an encoding of specific information. Someone can derive knowledge from a blue print which the man who drew it up never knew, just by taking a measurement which was not needed for drawing it up. And a blueprint, by definition, shares characteristics with the machine it is a blueprint of. Linear dimensions are preserved, or if not preserved in fact are scaled so that the actual dimension can be discovered by measurement and scaling up. Similarly the bearing (in a geometrical sense) of one part from another is preserved.

But is this convincing? A pencil line in a blueprint stands for an edge on the finished object, but they are only the same in so far as each is viewed, abstractly, as an instance of geomatrical line. On the other hand, though, is it possible, without unreasonable stipulation, to give an account of two objects of experience sharing characteristics other than in terms of their being one description that fits them both? I think not. Any diagram that can be described to some extent in the same terms that the thing of which it is a diagram can be described is to that extent an iconic symbol. The fact that the diagram might be drawn in ink on paper and the finished item might be cast in steel is irrelevent here. If each can be described as, say, being fourteen inches high, then in that respect the diagram is properly to be regarded as iconic, although not probably, in most other respects.

This probably sounds odd, but it is not, I believe, symptomatic of some inner weakness of my account of icons. Rather, I suggest, it is symptomatic of the danger of trying to classify symbols too precisely. Symbols are used for communication, and the history of the growth of human knowledge is also the history of people inventing new symbol systems. In such a dynamic situation any attempt to classify is likely to run into difficulties, a classification may seem correct at one point in time, but later a new mode of expression might evolve that just won't fit. In such a situation the only possibility is to classify in any way that seems useful but not to be surprised by some blurring between the classes.

It seems clear to me that a useful way of looking would be to say that icons are a special kind of symbol, the significance of which depends both on a convention and on the nature of the inscription. Samples of cloth or wallpaper are a clear central case of iconic symbolism. Diagrams incorporate iconic elements, but also embody 'pure' symbols (ie. the physical nature of the inscription is theoretically irrelevent.) This only means that in using symbols we are not very particular about 'purity.' We use symbols for purposes and when we have a purpose we use what is available without any reference to any theoretical notion of purity. Such notions are the domain of the philosopher and the distinction they lead to are made for philosophical purposes. In everyday life few philosophers would be so pendantic as to demand their rigid observation.

The notion of an iconic symbol hinges on the necessity for conventions which govern the question of what characteristics of an icon are relevant to its function as a sign. There is however, one possibility that might establish a class of pure icons. This possibility is that certain characteristics of certain objects of experience might be picked out by all human beings as a matter of natural fact, independantly of there being any conventions.

This is not merely to say that there may not be any convention which is explicitly statable in linguistic form, or, more accurately, which has not been explicitly stated because either nobody has yet managed it or else because there is some taboo against doing so. That conventionality consists in the existence of explicitly formulated and generally known rules is not, in my view, a justifiable position. I have already mentioned (in discussing the private language argument) Cooper's objection to the position that says that our ability to use language is dependant upon our knowing (in some sense) the rules of language. And yet language, surely, is a paradigm case of a convention governed system. In my discussion of meaning I will look at Cooper's argument in more detail and will suggest an alternative characterisation of conventionality.

What is needed for a sign to be a pure icon is that certain objects of experience are seen by human beings as exhibiting certain characteristics without our having learned to pick out those characteristics. Alston writes:

> "Inprimitive religion, ritual acts may focus around a bull, a mountain, or a sacred fire without there being an explicit account of what gives these objects the significance they have.... the bull.... is being treated as sacred because of certain characteristics it embodies to a marked degree, such as virility, even though none of the workers has formulated this as such. The bull could then be said to function as an icon of virility... without this functioning being tied down by any convention or rules."

I'm not totally convinced by Alston's examples here. Fire is an important 'technological' advance: it makes such things as cooking and the firing of pots possible, is also useful in ground clearance and keeps dangerous animals at bay. That fire should be thought of as important in a primitive culture could well be explained indexically, by associating the flame with its uses. And it seems to be a feature of religions in general that they make holy what is socially important. About

the worship of a mountain I can only suggest that if the role of the mountain in the life of a primitive culture were, as a matter of physical fact, important, then again its initial significance could arise indexically. And this would be easy to explain if the mountain happened to be a live volcano. Again, with the bull/virility link, it seems more likely to me that the importance would arise indexically. Bulls are temperamental creatures and, as such, are more dangerous than useful for most purposes. Modern stockmen castrate most male beasts, but they always need one fully endowed male for stud. The bull/virility link is, I suggest, again indexical, arising from the fact that the only reason anybody would want a bull around is in order to use it at stud.

At a more fundamental level I argued earlier that for language acquisition to be possible we must, as human beings, have an innate tendency to classify the things of experience in certain basic ways. And as classification always depends on the things classed togetner having the same significance from a point of view, then this suggests that, for human infants, certain experiences have a natural significance. My own view is that this natural significance is probably best understood as arising from the satisfaction of certain basic needs, needs which have some psychological/physiological immediacy like the need for hunger to be satisfied, for warmth, perhaps for affection. But it may be that such an approach, in which things acquire significance indexically by association with these primary drives (to use the psychological terminology) is an inadequate basis upon which to build an account which adequately deals with the available psychological data. If this is the case, then we may need to postulate pure icons.

I am not a psychologist and am not qualified to make any statement about whether or not there is any

psychological data which is explicable only by saying that there are objects of experience that must be regarded as pure icons. I tend towards the view that all icons are iconic symbols but in some cases the selection of characteristics which are relevent to some object's function as an icon is weighted by the indexical significance of that object (or that class of objects) within a form of life. But I cannot state categorically that this is the case. The question, it seems to me, is an empirical one and, as such, lies within the jurisdiction of psychology. What I would say, however, is that the view that significance flows outwards through the indexical significance of things-in-the-world to human beings because of the nature of human beings has an explanatory power which, as far as I can see, the postulation of pure icons simply does not have.

Meaning and Communication.

The Significance of Signs - an approach to the theory of meaning.

In my discussion of concepts I argued that talk of concepts must be understood as being talk about human habits of conceptualisation, that a concept should not be thought of as a 'thing' which someone possesses anymore than pain is some sort of 'thing.' Similar remarks must be made about meaning. There is no such thing as a meaning, meanings cannot be pointed at, rather signs are meaningful to people - signs are significant. There is no great harm in talking about meanings of signs or about someone grasping a meaning so long as this doesn't lead us into philosophical error. But our normal everyday ways of talking are notoriously lax and to take the grammatical form of ordinary language ways of talking too seriously is, as Wittgenstein showed with language of sensation, likely to lead us astray in doing philosophy.

Reifying meanings is something which has happened in philosophy. Those philosophers who hold that the meaning of a word is that to which it refers made this mistake. Counter examples to this approach abound. Frege pointed out that the phrases, "the morning star," and "the evening star," both refer to the planet Venus but have different meanings. Strawton, in 'On Referring,' where he criticizes Russell's Theory of Descriptions, wrote:

> "The source of Russell's mistake was that he thought that referring or mentioning, if it occured at all, must be meaning. He did not distinguish B_1 (an expression) from B_2 (a use of an expression); he confused expressions with their use in a particular context; and so confused meaning with mentioning, with referring. If I talk about my handkerchief, I can, perhaps, produce the object I am referring to out of my pocket. I can't produce the meaning of the expression, 'my handkerchief,' out of my

pocket."

Strawson goes on to suggest that giving the meaning of a word, in the relevent sense of 'meaning' is to "...explain and illustrate the conventions governing the use of an expression." The point here is not that reference and meaning are not related, but that meaning cannot be explained in terms of what a word or phrase refers to. Rather we must explain meaning in terms of use and one use to which words can be put is in referring. These remarks are vague in the extreme and will be amplified in later discussion.

Another semi-reification of meaning is covered by the umbrella-term 'mental-entity theory'. Peirce's interpretant is such an entity. Such theories explain the word/world link as being established via a mental image or mental sign of some kind. Wittgenstein's Picture Theory (from the Tractatus) is a sophisticated version of such a theory although the fact that Wittgenstein later rejected it renders unneccesary any detailed discussion of it here. One objection to such theories is that some meaningful phrases cannot, in principle, give rise to images, for instance the phrase 'four dimensional space.' But a more general objection is that such an account says nothing about how some sign can have significance for somebody. If the meaning of some 'thing' in the world is explained in terms of some mental entity, the problem of signigicance is only pushed back one step to the question of how that mental entity can have significance. For instance, if I visualise a street map in order to get where I'm going any theory of meaning must explain how the 'mental' street map has significance for me, just as it must answer the same question about the real thing. To explain the significance of the mental entity in terms of other mental entities simply leads to an infinite regress and also seems to come perilously close to requiring the postulation of something akin to Ryle's 'ghost-in-the-machine,' in order to explain how mental entities are read.

Again this does not, I think, mean that mentalistic concepts are out of place in a theory of meaning, but that we must not think of the mind as some sort of ghostly museum where 'meanings' are exhibited. I will argue later that the significance of symbols (especially language) arises through their place in a shared conceptual scheme,a common way of classifying experience established interpersonally within a form of life.

An alternative approach to the problem of meaning, particularly the meaning of referring sentences/words, is via some form of the principle of verification. Schlick's version is, 'The meaningof a proposition is the method of its verification," (from 'Meaning and Verification'). This is vague, Ayer in 'Language, Truth and Logic' offers "A sentence is factually significant to a given person if, and only if, he knows how to verify the proposition which it purports to express." The crucial notion in Ayer's version is that of 'factual significance.' This clearly doesn't exhaust the meaning of utterances. A teacher bellowing, 'Silence!'at an unruly class is not making a statement with any factual significance, he is giving an order (whether successfully or not).

But even within the relatively narrow confines of factually significant statements verificationism fails. It is hard to give criterion for what is, in principle, verifiable. Many of the laws of physics cannot be verified directly, they are arrived at indirectly. Waisman (in an article 'Verifiability,' reprinted in 'The theory of meaning,' ed. G.H.R. Parkinson) has pointed out also that there is, strictly speaking, a logical gap between observation statements and physical object statements which could prove embarrassing for a verificationist approach.

Yet, again, the failure of a theory should not be allowed to blind us as to an important point which the

verificationists were getting at. We can explain this 'intuitively' by saying that we would surely not allow that someone, for instance, understood the word 'pig' if he could not recognise a pig when he saw one. Again, the vagueness must stand for a while, to be clarified in later discussion.

One strong feature of the theories of meaning I have sketched out here is their preoccupation with the language/world relation, and this is a very important aspect of any theory of meaning. But referring is only one of the things we do with language, we also give orders, make requests, persuade etc. My own belief is that the essential element in any theory of meaning must be the speech act. We must acknowledge that learning a language is neither more nor less than learning how to do things with words. It seems clear to me that some of the attempts to elucidate meaning in purely extensional terms, like those of Davidson and his followers, of Quine (in 'The Roots of Reference) and of Chomsky, with his insistence on approaching language from the point of view of syntax rather than semantics, are plausible only in the light of the fact that philosophers have traditionally treated language as a formal entity and not as a tool used by people for purposes.

This is a contentious position to take in view of the influence of those philosophers I have just named. But I think it is the right position to take. I will now attempt to back up this claim with both philosophical argument and evidence from psychologists like Brown and Bruner as to how children do aquire language.

Meaning and Truth.

In his article, 'Truth and Meaning', (Synthese xvii -'67), Donald Davidson attempted to adapt work by Tarski ('The concept of Truth in Formulised Languages' in the book 'Logic, Semantics, Metamathematics') to give a theory of meaning for natural languages. This approach involves giving the truth conditions of a sentence S of any object language in terms of a meta-linguistic structural description of that sentence in strictly non-intentional terms. There are a number of technical problems with Davidson's original account which are thoroughly discussed in the book 'Truth and Meaning' (ed. Evans and McDowell). But what I am concerned with here is the assertion, central to Davidson's thesis on meaning, That meaning can be discussed independently of discussion of what paople do with language. This is an important point as, despite the fact that the detail of Davidson's own theory of meaning has been disputed, there is a great deal of work being done based on his central belief that the meaning of language can be elucidated fully in extensional terms without recourse to discussion of an utterer's intent.

There are a number of problemswith Davidson's theory, for instance how can the meaning of an order, like, "Get Out!" be elucidated in terem of truth conditions? But such quibbles don't really get at the important point which is the question of whether we should take a formalised theory of the Davidson-type seriously as a contender for the role of a theory of meaning appropriate for natural languages. My personal feeling is that we should not.

Davidson himself, in an article in the Evans/McDowell book, seems to have admitted a basic fallacy in his approach. He wrote:

> "...,my mistake was to overlook the fact that someone might know a sufficiently unique theory..." (for producing the metalinguistic description)" without knowing that it was sufficiently unique.

> The distinction was easy for me to neglect because I imagined the theory to be known by somebody who had constructed it from the evidence, and such a person could not fail to realise that his theory satisfied the constraints."

Thus, the existence of the theory is not enough, someone must both know it and know what sort of theory it is. The trouble is that this understanding of the theory, by a potential user, is not, in principle, includable in a Davidson-type theory which is supposed to explain such understanding. Davidson's initial theory was one of translation and it failed. But beyond this I wish to suggest that even had Davidson's theory not failed for internal reasons it still would not be adequate as an explanation of how people can understand their native language. The crux lies in the distinction between knowing and following a theory and according with a theory. The point is that a Davidson-type theory might be produced for a language which made it possible for a theorist to write down the meaning of a sentence metalinguistically. But such an achievment would not in anyway establish anything about how people understand their home languages unless a further claim was made to the effect that a native speaker's ability to speak a language can only be explained in terms of his possessing, in some sense, knowledge of a Davidson-type theory. But such a claim falls foul of an argument given in chapter 4 of David E. Cooper's book, 'Knowledge of Language'. This is a very important argument so I will repeat it.

Cooper contrasts the behaviour of a foreigner who has learned English from a book with that of a native speaker of English who never possessed any sort of English text book. The case of the foreigner is very similar to that of a theorist who knows a Davidson-type meaning-theory. Both understand English because they know the rules of the language and they know the rules because they had them written down and learned them. Even if, after a while, such a rule-follower no longer needs his written rules, and if, as he becomes more fluent in his use and under

standing of English, he even forgets the specific rules, we can still say he speaks English because he follows rules, and we can specify which rules (in principle if not in fact). This route to speaking English is obviously a paradigm example of rule following behaviour. Cooper calls it R.F.B.$_1$.

Now the native English speaker produces very similar behaviour to that of our non-native English speaker. They both speak English. But in the native speaker's case there is a problem with talk of rules. This arises because any particular reference set of behaviour can be described by any number of logically distinct sets of rules. The logical distinctness can be achieved simply by making sure that deleting of one rule from a particular set of rules (R1) produces a set of rules (R1-) which has a set of reference behaviour which is not coextensive with that of a set of rules (R2-) produced by deleting any number of rules from any other of the sets of rules other than the original R1. The problem is that the evidence available for the native speaker cannot, in principle, establish which set of rules he is following, whereas it is relatively easy to get hold of a non-native speaker's text book.

This doesn't, however, mean that the native speakers mastering of English cannot be referred to as rule following behaviour. We can decide to call it rule following for no other reason than that it is similar to that of a nonnative speakers. And we know R.F.B.$_1$ is rule following. Cooper calls the native speaker's linguistic behaviour R.F.B.$_2$.

The problem for Davidson-type theories is that they have to argue along the following lines:

(i) person P_1 produces R.F.B_1 because he knows theory T.

(ii) P_2 produces R.F.B_2 (practically indistinguishable from R.F.B_2)

$\therefore$ (iii) P_2 knows theory T (in some sense).

But this mode of argument is invalid. If we call $R.F.B_2$ rule following merely because it is practically indistinguishable from $R.F.B_1$, we are using analogical extension, we merely decide to extend the use of 'rule following' to cases of $R.F.B_2$. But the above argument involves analogical inference, saying its similarity must mean it follows the same rules, and this is invalid. The argument is of the same form as:

(i) P_1 doesn't drink alcohol because he is a devout methodist.

(ii) P_2 doesn't drink alcohol.

∴ (iii) P_2 is a devout Methodist.

It is the case ,though, that P_2 might be totally irreligious, and might love alcohol, but happens to have an ulcer which necessitates abstinence.

This argument shows up the gap between theory and fact in explanations of how people understand language. People don't know any theories of the Davidson-type (or of the transformational grammar type), And, what's more,there is no justification for saying that his apparent lack of knowledge is due to the fact that our knowledge of such theories is tacit - Cooper's argument demonstrates this fact.

The main gap between theory and fact in language, though, is that theories of the Davidson-type, of the Chomskyan kind, and those like Quine's in "Roots of Reference", are too well constructed. These theorists (especially Quine and Davidson's heirs - see the Evans/McDowell book) are much better logicians than the rest of us and they make demands on their theories which we simply couldn't start to make in ordinary language. This leads Quine, on P100 of 'Roots of Reference, to write:

> "Quantification, in the form in which we have come to know and love it, is less than a hundred years old. Still it is in principle a combination and excision of pre-existing idiom. It can be paraphrased into oldand ordinary English. By considering what steps could lead the small child or primitive man to quantification, rather than

> to the less tidy referential apparatus of actual English, we arrive at a psychogenic reconstruction in skeletal outline. We approximate to the essentials of the real psychogenesis of reference while avoiding inessential complications."

Coming from Quine, I find this highly disappointing. The man who pointed out the dangers of ascribing particular concepts to young children because their linguistic utterances did not adequately constrain the prqgmatically adequate interpretations possible, now tries to convince us that the rigorously worked out notion of reference which he, a formal logician, has come up with after a lifetime of research is the same notion of reference which people understand in the terms of the word 'dog' referring to a dog in the world. The point which has to be made is the fact that many of the concepts in everyday use are confused and (to the philosopher) confusing doesn't mean they don't exist, or that they are unusable. In specialist contexts the understanding of reference in an everyday way might lead to problems. Thus Quine's revised language of reference might prove a useful tool in some contexts. But to try and produce an account of the psychogenesis of reference in terms of a sophisticated theory in formal logic is simply to make a mistake.

In the first chapter of, 'An Introduction to the Philosophy of Mathematics', Russell pointed out that what, psychologically speaking, constitutes our base in the concept of number, is, logically speaking, somewhere in the mid-range. In other words, Russell warned against silly ideas like assuming that, because people can count, they have, in some sense, knowledge of the axioms of the natural numbers. This, it seems to me, is exactly the sort of mistake which theorists like Davidson, Chomsky and Quine have made. Instead of seeing their theories as formalised descriptions, useful for certain purposes, they have seen their formal structures

as reflective of people's mental lives to an extent which the theoretical basis simply does not justify.

The point is that a theory which, when known, would allow an alien to perform some human activity is not, because of this, an account of how the human mind functions. Consider the problem of how an archer gets an arrow to hit a target. To get a computer to perform this action we would have to programme it with laws of motion which take into account things like air resistance, wind-speed, force exerted by the bow, relative positions of bow and target, direction of wind etc. The computer, using modified Newtonian equations and current data on all the relevant variables would fire the arrow and hit the target. But human beings don't work like that. Our learning is hit and miss. The human order lets fly an arrow and looks where it goes, he then changes direction, elevation and strength of pull until the arrow goes where he wants it to go. A coach will give directions on the best way to hold the bow, position the feet etc., for success in hitting the target. After a while, through practise, the human archer might (or might not - success isn't guaranteed) manage to inculcate habits of posture and bodily movement into himself so that he is successful in hitting the target.

This, I suggest, is how we learn language. We try to communicate and gradually, in a hit and miss fashion, come to acquire habits of speech which allow us to communicate successfully with others. To describe this process in terms of the acquisition of a body of theoretical knowledge about language is simply to be wrong. Theoretical models of language have their uses. Davidson, for instance, seems mainly to have been interested in a theory of translation in the first instance. But one such use is <u>not</u> the description of the mental processes underlying language use.

The fact is that the notion of there being an entity called language which we can acquire knowledge of is no more than an abstraction from the fact that certain of the expressive/communicative acts of people can be described as linguistic acts. Now the identification of a linguistic act does depend on the notion of a language being made up of a finite number of particles combinable in certain ways to produce significant (with the form of life) utterances. But this is just a formal classification of the ways in which people communicate, and a classification which is not widely observed by non-specialists - musicians often talk of music as a language despite the fact that it doesn't satisfy the formal syntactic criterion.

Thus I maintain that the only way to grasp the significance of language, or any symbolic form, is to approach it in situe, to show how people come to use such symbols for purposes and with intent. In other words I maintain that the only way to explain the meaning of any symbolic expression, word or sentence, is to show the uses to which it can be put within a particular language game (bearing in mind that it may have conflicting uses in different language games).

All this might be thought of as too quick a dismissal of Davidson-type theories, but I don't think it is. I am not concerned with the internal problems generated in the attempt to construct a theory of this sort as I reject the claim that such a theory can constitute an explanation of our understanding of linguistic utterances, even of statements (which is all a Davidsonian account is designed to deal with).

Any formal description of the truth conditions of statements can only explain our understanding of statements if that understanding consists in knowledge of the theory which generates those descriptions. Cooper's argument undermines this suggestion with respect to the linguistic abilities of native speakers of a

language - there just isn't any plausibility in the suggestion that people know (tacitly or otherwise) Davidson's or any related theory.

This objection could be resisted by suggesting that the sort of theory under discussion is a formal way of trying to discover what we must know if we are to use language as we do. The actual form of the theory, it might be suggested, is irrelevent, what is important is that the theory as written embodies the conceptual framework which we must arrive at if we are to be linguistically competent. What this approach is saying is that, once we have a Davidsonian (or related) theory for any language, we can say that any speaker of that language knows the theory. Knowing the theory, on this line of argument, just <u>is</u> being able to speak the language. The position adopted involves the acceptance of the assertion that a speaker's mastery of his language consists in an implicit grasp of a theory of meaning for that language.

Michael Dummet (in 'What is a theory of meaning?' - in 'Mind and Language' ed. Guttenplan) raises a number of objections to the Davidsonian approach, but doesn't seem inclined to take issue with the basic assertion that our ability to use language consists in tacit knowledge of a theory of meaning. His objections deal with the technical problems of Davidson's account which, he suggests, are unsurmountable. Dummet doesn's like the holism of the Davidsonian approach. After discussing particular problems he writes (P.138).

> "... the idea that we can..., by reference to the totality of all judgements made by speakers, obtain a single uniform representation of the manner in which the bearers of all the names and the extensions of all the predicates of the language are determined, overlooks the diversity of the many types of expression our language contains, and the gradations of level at which they lie."

The details of Dummet's objections are available for anyone to look at, but my feeling is that he fails to engage with one fundamental problem - that of how, and in what sense, a formal description of how people use language, of what judgements the users of language make, can constitute an explanation of how it is that we can use language as we do.

To identify the ability to use a language as consisting in (tacit) knowledge of a theory of the sort in question seems either to fall foul of Cooper's objection or to abondon its explanatory claims. If it is said that I can only speak English because I have tacit knowledge of a theory of meaning of a sort which a Davidsonian (or related) approach is aimed at making explicit my reply is simply to raise Cooper's objection.

If the reply to this move is to say that my ability to speak English is not the result of my prior knowledge of the theory but rather that my ability 'consists in' my knowledge of the theory, then my rejoinder is that the theory has no explanatory power. I will explain.

For simplicity let us assume there is a Davidson-type theory, T, which satisfies all the technical demands which logicians might make on it and which is the theory which, as a native speaker of English, I am supposed to have tacit knowledge of. If my linguistic abilities consist in knowledge of T in a sense which avoids Cooper's objection then it seems to me that what is being said is that my knowledge of T and my ability to speak English are the same thing.

What is undeniably the case is that I possess certain verbal dispositions, these dispositions are constitutive of my ability to speak English, what that ability consists in. But to say this does not in anyway explain my mastery of the English language. To say that I possess certain verbal dispositions which I share with most people who

live in England is to say that I speak English and in no way explains my ability to speak/understand the language. Further, to give a detailed formal description of those dispositions constitutive of my mastery of English makes no contribution to the task of explaining that mastery. The explanatory part of any theory of meaning must, surely, say something about how mastery comes about. This is what a theory of the sort I'm discussing cannot do. To avoid Cooper's objection the protagonist of theory T must say that my ability to speak English just is my knowledge of T, just is my possession of the relevant verbal dispositions.

I'm labouring the point, but it is important to do so. Either my knowledge of T is said to explain my possession of the verbal dispositions, as my (primitive) knowledge of motorcycle mechanics explains why I check for a spark, fuel blockages and dirt/water in the carburettor when my bike won't start, or else my knowledge of T and my verbal dispositions are the same thing. The former case is ruled out by Cooper's argument, the latter case is one in which my knowledge of T is identified with my disposition to use language in accordance with T. This involves the protagonists of T holding a dispositional account of knowledge and this is simply unhelpful. I do what I do when my motorbike won't start because of the relevant knowledge I possess, the fact that I know a little about motor cycle mechanics explains my disposition to do those things. To give a dispositional account of knowledge is unhelpful because it robs the statement ' I do what I do because I know what I know,' of explanatory power. Under a dispositional account this statement is indestinguishable from 'I do what I do because I do what I do,' and this says no more than, 'I do what I do.' Thus T, whilst it might be useful, to linguists for instance, simply doesn't explain anything about my (or anyone else's) understanding of language and hence is inadequate as a theory of meaning.

In subsequent sections I will argue that the meaning of an utterance is to be analysed in terms of its speech act appropriateness within a form of life. It seems to me that 'theories of meaning' of a Davidsonian-type might, if technical problems such as those raised by Dummet can be overcome, prove useful as a way of translating statements in natural languages into statements in a rigorously defined metalanguage, thus 'exhibiting' the meaning of the naturally occuring language clearly and unambiguously to anyone who understands the metalanguage. This would make such a theory a useful technical tool. But in so far as a theory of meaning must solve the problem of explaining a native speaker's mastery of his language I believe that we must conclude that any theory of the Davidson type must be counted as inadequate. The central problem is that a formal description, for instance a law of gravity stated in mathematical form, is not an explanation. A satisfactory law of gravitiation must describe accurately what happens when a body falls under gravity, but the law doesn't explain what gravity is. Similarly even if a successful Davidsonian theory was forthcoming all we would have would be an accurate formal description, one with which our verbal activities would accord, but this accordance with the theory is not evidence that we achieve it by knowing and following the theory in any sense beyond that of R.F.B.2. Whatever a successful Davidson-type theory could achieve it simply cannot solve the problem of explaining a native user's knowledge of his language.

Meaning and Use - Speech Acts.

Talk of coming to grips with the problem of meaning by looking at how people use language has been seen as an important break through. But although its importance as a new direction for linguistic philosophy is indisputable, the notion of a 'use of language' is not as problem free as some philosophers have thought.

Alston in his article 'Meaning and Use' (in Parkinson), raises a number of questions about what the relationship between use and meaning is. He looks at examples of the kind:

> "The use of 'presumably' is inappropriate at this point.
>
> The use of sedatives is not indicated in his case.
>
> 'A' used 'Communist' effectively.
>
> 'Amen' is used to close a prayer," (P.144),

and concludes that such non-technical uses of 'use' are of little help to giving a useful explication of the meaning as use approach.

Alston approaches the problem of meaning and use by noting that telling somebody the meaning of a word is putting him in a position to use it. He writes (P.146)

> "Ultimately a meaning-statement (a statement as to what a linguistic expression means) is to be tested by determining what people do in their employment of the expression in question. For in saying what the meaning of an expression is, what we do is not to designate some entity which could be called the meaning of the expression, but rather to exhibit another expression which has some sort of equivalance with the first.....e.g. 'Procrastinate' means 'put things off'."

The rest of Alston's article is taken up with attempting to elucidate this notion of equivalence of expressions. He comes down to the idea that expressions are equivalent if they can be substituted for one another in sentences without altering the illocutionary act potentidl of the sentences. Equivalence of sentences depends upon the equivalent sentences having the same illocutionary act potential. I will not go into the technical problems which arise from this approach and which lead Alston to produce more sophisticated versions of this basic account, designed to deal with the multivocality of expressions. I will also leave, for now, any discussion of illocutionary acts.

What I want to look at as the idea that an adequate account of meaning can be got from this notion of sameness of meaning. Alston denies (footnote P.159) that such an account makes meaning purely intralinguistic. His position is that the link between sameness of meaning and illocutionary acts and between such speech acts and the world keeps meaning linked, although indirectly, to the extra-linguistic world. But, although this assertion may well be correct, Alston doesn't explain the link between illocution and world and seems unable to do so. In a footnote (P.164) he writes:

> "It seems that we cannot give an adequate account of knowing (or learning) the meaning of a word in terms of sameness of use. I can know (learn) the meaning of 'tree' without knowing (learning) that 'tree' has the same use as some other expression. But if we had an appropriate concept of the use of 'tree', we might well be able to show that what I know (learn) when I know (learn) the meaning of 'tree' is that it has a certain use."

I would suggest that Alston's article is useful in that it shows how language can grow by defining new terms reflexively. Thus a pupil in school can learn 'isosoles' as the name of a triangle with two sides the same so long as that pupil knows what a triangle is, knows what the sides are and knows what it is for two sides to be the same.

But this sort of process, of which I will have more to say later, cannot be used to explain a child's first steps in language except in a slightly altered version.

If we stress the importance of communicative and expressive acts when discussing the significance of symbols we can, I believe, get somewhere, Wittgenstein suggested in 'Investigations' that the language of pain replaces natural pain behaviour as an expression of pain and that pain words (and sensation words in general) should not be thought of as the names of sensations. This idea of linguistic behaviour replacing pre-linguistic communicative/expressive behaviour has been taken up by some psychologists working on the acquisition and early development of language. In his lecture "Language and Experience", (in 'John Dewey Rediscovered' ed. R.S. Peters), Bruner argues that long before a child's verbal utterances can be plausibly called linguistic there arise procedures whereby mother and child ensure joint attention. This is done,

> ".... by monitoring each other's gaze direction, by using distinctive phonological markings, by developing primitive and idosyncontic labelling procedures, by developing demonstrative heuristics like showing etc."

By the age of 15 months Bruner's experimental subjects were able to reply to questions like, "Where's the ball?" by pointing to the ball. Pure pointing, as a way of drawing attention to some object, had, however, appeared between 12 and 13 months. Bruner's work shows clearly that the pre-linguistic communications between mother and child are very complex and that the child's communicative acts are very often instrumental, they are aimed at getting something, a toy, a sweetie, a kiss and a cuddle being amongst the most usual objects of desire. His work has led Bruner to write:

> "...the child is in fact learning not so much a language, as how to proceed in achieving certain ends by the use of language. The input is not a corpus; the output is not a grammar."

Going back to Alston's approach we could suggest that a child initially gets into language by discovering that he can achieve his ends better by linguistic means than by non-linguistic means. In other words he is more likely to get his teddy-bear by pointing and saying something phonetically similar to 'Teddy,' than by pointing and burbling at random. This is a crude example, but adequate for my purposes. My suggestion is that if we look at what people do with symbols, including the highly ambiguous 'symbols' defined between a mother and her (pre-linguistic) child, we can move towards getting a grip on the relationship between meaning and use.

A baby wants something. He discovers, by trial and error, that by performing certain actions he can get it. Thus the actions become symbols in the making, although it is not clear at first whether the baby understands his actions as a means of communicating what he wants to his mother or whether he sees them vaguely as a way of getting what he wants. The child's actions, of course, can only be properly be regarded as symbolic when he understands that his actions only get him what he wants because his mother reads them as having significance. And it is unlikely that this happens at a very early age. But Bruner's data, including his observations that pre-linguistic children do learn to direct their mother's attention to things of interest, suggests that communicative intent of some sort is present before any linguistic competence.

The details here don't matter particularly from a philosophical point of view. The point here is that the acquisition of language, in its first stages, can be looked at in terms of the child learning that a communication using specific verbal signs is likely to achieve the same ends as a communication not using such signs, and is likely to do so more reliably. There is also evidence that

this tendency of linguistic communication to improve (in terms of reliability in achieving ends) on non-linguistic communication is artificially arranged by mothers. Bruner, and Brown and Bellugi (in 'Language' ed. Oldfield & Marshall) in seperate research both remark that as children acquire more linguistic competence mothers begin to feign incomprehension of communications which, at an earlier age, were understood straight away.

What I am suggesting here is that we should see the significance of a symbolic act in terms of what sorts of things we can do by uttering (or in general exhibiting) those symbols. Thus when we hear someone say something we understand them as doing something by using symbols which are defined interpersonally within a form of life as being appropriate for performing certain sorts of speech act. This is still vague, but it points out an important fact: that the meaning of words (or symbols in general) is a matter of what use any particular symbolic expression has within a form of life, and 'use' here is to be understood in terms of an interpersonal agreement within a form of life as to which symbols are appropriate for the performance of certain sorts of communicative and expressive acts.

Having got this far, my next step will be to look at Austin's, 'How To Do Things With Words."

Austin - How to do things with words.

I am interested, in this section, in Austin's locutionary/illocutionary/perlocutionary act trichotomy. I will not, for reason's that will (hopefully) become clear, adopt Austin's approach, instead I will attempt to draw out from Austin's account what I take to be an account of meaning more suited to educational purposes. In particular I will attempt to skirt the problem of what constitutes a communicative act. This is not because I regard the emphasis put on communicative intent by many writers (e.g. Grice and Strawson) as a wrong move. It is because I feel that a clearer account of meaning will be obtained if, for now, the problems of communication are allowed to go through ' on-the-nod'. I do not intend to ignore those problems, rather I prefer, for the sake of lucidity, to leave them 'til later. Thus, although I may seem to regard the comprehension of utterer's intent as unproblematic in what I write here, this should not be taken to mean that I am begging important questions. I am simply leaving them for later.

According to Austin a locutionary act, ".... is in the full normal sense to do something - which includes the utterance of certain noises, the utterance of certain words in a certain construction, and the utterance of them with a certain 'meaning' in the favourite philosophical sense of that word, i.e. with a certain sense and with a certain reference. "(lecture 8, first paragraph). An illocutionary act is performed in performing a locution, or, as Austin put it:

> "To perform a locutionary act is in general, we may say, also and so ipso to perform an illocutionary act, as I propose to call it. To determine what illocutionary act is so performed we must determine in what way we are using the locution: asking or answering a question,
> giving some information or an assurance or a warning, announcing a verdict or an intention, pronouncing sentence,
> making an appointment or an appeal or a criticism, making an identification or giving a description, and the numerous like."

In Austin's usage the locution/Illocution dichotomy parallels the 'meaning' (i.e. sense and reference) / force dichotomy which I must deal with. As an illustration of this distinction I offer the following example. A friend seems to be taking seriously the idea of spending Christmas in Siberia. I say, "It's cold in Siberia," to him (call this S). The 'meaning$_A$' (Austin's sense) / force distinction can be illustrated by approaching the significance of S in two ways.

First we can get the meaning$_A$ (i.e. Austin's sense) of S by noting the explicit informational content of S, i.e. that information, or putative information, which can be got from S without reference to my intent in uttering it. If someone knows what it is to be cold im which ice is cold), knows what'Siberia' refers to and understands the grammatical conventions governing the structure of sentences, then he has grasped the meaning$_A$ of S. In using such terms as 'knowing what it is to be cold,' and 'understands the grammatical conventions...' I am begging a lot of questions which neither Austin nor Wittgenstein (whose work first moved towards looking at language in use) answered. These problems will be dealt with when I have extracted what I want from Austin's account and begin to fill in the detail of my own account.

The illocutionary force of S is not necessarily dependant on its sense or reference (although it may be.) No analysis of a sentence in terms of the meanings of individual words or phrases and syntactic structure will necessarily give a clue as to the force with which it was uttered. Thus, 'It's cold in Siberia' whatever it means$_A$, has a force beyond that meaning$_A$, a force which has to do with my intent in uttering it. My friend who was considering spending Christmas in Siberia would probably read my utterance of S more as an expression of disapproval than as a passing on of information. If I intend my utterance of S to express and communicate my disapproval of my friends plan, and if he understands me as disapproving, then, in

Austin's terminology, I have performed, by uttering S, a felicitous illocutionary act, namely of disapproval.

In this example I could have used an explicit performative for my illocution. I could have said., "I disapprove of spending Christmas in Siberia because it's cold there," in which case the meaning$_A$ of my utterance would also make clear the illocutionory force with which it was uttered. But in general we don't use such explicit performatives all that often, and in many cases there is no generally accepted way of making our intentions explicit. I could intend to insult someone by saying, "You have a mathematical understanding which is rivalled by that of a two year old chimp," and I could be understood as uttering an insult by whoever I said it to. But, as Austin points out, insulting is not something which can be done by using an explicit performative. In English at least the utterance, "I insult you," is simply not in general use.

There are a number of problems arising from the locution/ illocution distinction and from the roles of intention and convention in performing those sorts of speech act. The first point is that the distinction between locutionary and illocutionary acts appears to collapse under scrutiny. This is something which Austin himself points out. If I can say "Paris is the Capitdl of France," to someone as a bald statement, then I am doing nothing more than stating. But even if I have no other intention than to state, this is enough to allow it to be suggested that my utterance was an illocutionary act, an act with the illucutionary force of a statement. It seems unreasonable to create a seperate category of speech act for acts of stating as opposed to acts of warning or threatening or informing. It is true that Austin held that no illocutionary act could be said to have been performed unless uptake was secured, thus writing communication into his account. And this could allow locutions to be defined as statements made without any communicative intent, as mere expressions of knowledge or belief. But it seems to me that such a

move, although it might formally preserve the notion of a locution, would not be helpful in the task of writing a theory of meaning.

Instead I prefer to make a break with Austin at this point, or rather I prefer to try to reformulate what I take to be the important aspects of Austin's locution/illocution dichotomy in a way which I find more illuminating but with which Austin might not have agreed. I prefer to regard the making of a linguistic utterance as a speech act and to observe that there are two ways in which we commonly read such acts. The first way in which we read a speech act is by decoding it's informational content, by reading what it says about what. This is the same thing as grasping the meaning$_A$ of what is uttered without regard for the intent of the utterer and can be thought of as 'looking' at the utterance as a locution in Austin's sense. This involves grasping (in a way to be elucidated in later discussion) the conventions governing the sense and reference of the words used and the conventions governing the structure of sentences. There is no problem about characterising the uttering of sentences with a specific meaning$_A$, or informative significance as I prefer to call it, or the grasping of the informative significance of sentences as a convention-governed activity.

The second way of reading speech acts is by looking at the sentences or phrases uttered as being appropriate for certain purposes. Thus an utterance like, 'Get lost,' is learned, within certain forms of life, as a forceful way of telling someone to go away. And we read the utterance as revealing the utterer's intent that we really should go away, as well, perhaps, as an expression of the utterer's annoyance at our (continued) presence in his proximity. This reading of utterences as revealing an utterer's intentions and as expressive of his affective states (i.e. feelings, emotions etc.) I wish to call reading the cognitive force of the utterance. Cognitive force is closely linked to

Austin's notion of illocutionary force, but my inclusion of the utterer's affective state in what is revealed by the cognitive force of an utterance makes it a wider notion. In general I want to define the cognitive force of an utterance as what it reveals about the utterer's state of mind, the reasons behind his commission of the particular speech act including both intentions and affective states (including things like being in pain).

I do not wish to write uptake into my notion of a speech act because, although communication is an important aspect of language use and although language acquisition is grounded in communicative interaction, we also use language in expressive ways. For instance if someone hammering away in the next room lets loose a torrent of abusive language I can reasonably grasp from his use of such language that something has gone wrong and that he is expressing anger, frustration and maybe even pain. There is no need for discussion of communicative intent in such a context, there is only a linguistic expression of certain affective states (and I use this term loosely) which is overheard and understood. It seems to me that Austin restricted his notion of an illocutionary act in a way which both complicated and cut down the scope of the notion. I wish to use my notion of cognitive force in a much wider way. My break with Austin will be justified or not by the work which I can get my notion of cognitive force to do within the wider context of my thesis.

This reformulation, however, does not avoid one of the central problems with Austin's notion of an illocutionary act. Austin maintained that such acts were conventional in nature. He gave examples like those of an umpire saying, "Out!" a judge saying, "Guilty," both of which are conventional. But there is a gap between conventionality of this kind where explicit rules are being followed and saying that disapproving of holiday plans by saying, "It's cold in Siberia," is a conventionally defined speech act. If illocutionary acts are conventional, or, in terms of my reformulation, if the cognitive force of a speech act

is conventionally defined, then this conventionality must be something beyond the conventions which govern the informative significance of sentences. Otherwise cognitive force would not be distinct from informative significance. This point has been taken up by Strawson in his article, "Intention and Convention in Speech Acts," (re-printed in Parkinson - "The Theory of Meaning.") Strawson doubts whether many cases of illocutionary acts do, in fact, involve conventions beyond those governing the meaning$_A$ of an utterance. He writes:

> "Surely there may be cases in which to utter the words, "The ice over there is very thin," to a skater is to issue a warning (is to say something with the force of a warning) without its being the case that there is any statable convention at all (other than those which bear on the nature of the locutionary act) such that the speaker's act can be said to be an act done as conforming to that convention."

Strawson is here suggesting that although there are clear cases in which context bound conventions define the force of an illocutionary act, this does not mean that there are always these 'extra' conventions (beyond those governing meaning$_A$) governing illocutionary force. In the above context, "The ice over there is very thin," functions as a warning not because its use is governed by explicit convention of the sort that makes, "Guilty," an appropriate form of words for the foreman of a jury to declare a defendant guilty. Rather the appropriatness of, "The ice over there is very thin," depends upon its meaning$_A$ and upon the assumption within a form of life that thin ice is a danger to be avoided. This seems to suggest that the illocutionary (or cognitive) force of an utterance can depend directly upon the utterance's meaning$_A$ (or, in my terms, informative significance) in the context of utterance. So the force of an utterance can derive from its informative significance in that cognitive force can derive from the bearing the conveyed information has on the likely, or usual (within a form of life), actions of someone in receipt of that information with respect to the state of

affairs specified. And this is to say only that if I am skating on a frozen pond and someone says to me, "The ice over there is very thin," then, because I don't want to fall through the ice into icy water, I will probably take the information passed on to me as a warning to stay away. To read such an utterance in such a context as a warning is so reasonable that it would be unlikely that anyone intending it as a warning would feel it necessary to make the fact that it was intended as a warning explicit.

But all this does not mean that cognitive force does not involve conventionality above that involved in defining the informative significance of an utterance. The generation of cognitive force may depend upon an utterance's informative significance, but it must also be dependant on those socially defined presumptions and judgements constitutive of a form of life. Cognitive force must derive from judgements made within a particular form of life about whether 'this' sort of statement in 'this' context constitutes a threat or a warning, politeness or rudeness or whatever. In other words a judgement about what sort of speech act is being performed from the point of view of its cognitive force and hence what sort of speech act someone from the form of life would normally be performing if he were to choose to use that form of words in that context. Knowing how to use words for their cognitive force is knowing what sorts of judgement are normally made within a form of life about what sorts of statement in what sorts of context. The assumption is that an initiate of a particular form of life, knowing the judgements likely to be passed on his utterances (in terms of cognitive force) can be held responsiblefor the cognitive force of his actions. If he thought about what he was saying then he must have known what judgements would have been made and hence must have acted intentionally. Evidence of thoughtlessness or of having failed to see an alternative interpretation may be regarded as mitigation in say, the case of of rudeness. In general, though, we tend to judge the utterance rather than the utterers intent. This can

lead to severe problems particularly for attempts at communication between language games. Judgements as to the cognitive forces of an utterance are conventions basic to a form of life and are a cultural variable and it is this variability which creates problems in trans-cultural communication.

The main point here though is that the appropriateness of a particular locution (or utterance with a certain informative significance) for the performance of a particular illocution (or for carrying a certain cognitive force) should not be thought of as problematic. This problem arises only if we make the mistake of thinking that language is primarily concerned with producing utterances with a certain informative significance and that the making of utterances with a particular cognitive force is something we learn to do later.

This, as Bruner has shown, is a misconception of language and its acquisition. Language is acquired as a way of doing things, not merely as a way of labelling and precisely specifying states of affairs. Learning how to make factual statements is an important part of language acquisition, but children also learn to ask for things, to ask questions, to report pain or hunger. And Bruner's research shows clearly that there is no psychological priority to learning how to make statements. Analysing the significance of linguistic acts in terms of informative significance and cognitive force will, I believe, prove useful. But a useful technical approach does not necessarily reflect the nature of what is analysed. Thus analysing meaning in terms of informative significance and cognitive force does not imply that language use is compounded of two distinct activities any more than the fact that the analysis of the motion of a projectile through space is done easiest by taking components along three mutually orthogonal axes should be taken as evidence that

the projectile is, in fact, moving in three directions at once.

My contention is that we should regard language not as a formal entity to be analysed formally, but as a tool evolved by human beings and used for certain purposes. When we learn language we learn how to do things with words, we learn to state, ask questions, warn, threaten etc. by learning what forms of words are appropriate for such acts. Thus as we learn to use language correctly within our native form of life we learn what sorts of linguistic utterances constitute what sort of speech acts in which contexts. One of the things we learn to do is to encode information in linguistic form and to decode other's utterances in order to acquire information, but we also learn how to act in other ways, we learn what sorts of utterance have what sort of cognitive force and when, how to ask for something to eat, or a new toy, how to say when we hurt, how to perform any number of speech acts for which the informative significance of the utterance is either instrumental in or irrelevent to the conveying of an intent or the expression of an affective state.

In the case of speech acts in which intentionality is relevent conventionality plays a part in enabling us to make our intentions public. It plays a part by defining, within a form of life, the sorts of linguistic utterance which are appropriate for performing the various speech acts within certain broadly defined contents. These conventions are not all as fully defined as those governing informative significance. It is the case that we often mistake the intentions of others, but it is also the case that we usually manage to read them with reasonable accuracy. Expressive language is an odd case. We can use such language intentionally as in saying, "My hand hurts." But there are cases, such as saying when we miss the nail and hammer our thumb, where we simply let rip with no intention to do so - indeed we may be embarrassed by our own outburst. This seems to be a clear case where a linguistic outburst directly replaces saying,

"Ouch!" Similarly there are cases where people speak 'without knowing what they say' as when anger or sorrow overcomes them. There appear to be cases in which natural responses (like 'Ouch!), which are linked indexically with particular affective states become suppressed and replaced with symbolic utterances which, nevertheless, still function, in a sense, as indices. Most teachers know the value of being able to produce a fair copy of such behaviour as a way of emphasising a point when dealing with discipline problems.

Ignoring, for the sake of clarity, those cases in which we lose control of some affective state and give vent to our feelings linguistically we can say something about the convention-dependance of the cognitive force of an utterance. What we learn, as we acquire language, are ways to act. In a linguistic act the motives behind someone's utterance may be many and complex - but such acts involve producing an utterance intentionally with a particular end in mind. Conventionality comes in because the forms of words appropriate to attaining the required end are specified interpersonally within a form of life. Thus, when we want to ask a question we use certain grammatical structures and certain vocal inflections. And the correct grammatical construction and correct vocal inflection is defined socially within a form of life. What form of words is appropriate for which speech acts is a matter of convention. Thus the cognitive force of particular utterances is a matter of convention. It is further the case that many of the conventions governing cognitive force are not grammatical. As with Strawson's example the cognitive force of an utterance can drive from the relation of the informative significance of an utterance to the assumptions basic to a form of life. We learn that to say certain things in certain contexts is rude or constitutes threatening behaviour, and so we become able to be intentionally rude or to threaten in similar contexts when we encounter them. But such assumptions, as they could logically be abondoned or exchanged for others, must be

regarded as conventional. I would argue therefore that cognitive force is dependant upon convention either directly as when syntactic structures appropriate for certain speech acts are specified or indirectly as when the syntactic structure gives no clue as to cognitive force but the cognitive force is clear in the context of utterance to those who know the (conventionally defined) presuppositions and judgements constitutive of a form of life.

This implies a notion of conventionality which might well be regarded as problematic, much as the notion of rule following behaviour is problematic when the rules cannot be specified. This is particularly so in the case of the conventionality of the presuppositions constitutive of a form of life. Talk of tacit knowledge of such convention merely obscures the difficulties involved. The problem of how people come to follow non-explicit conventions is the same as that of how people who know no explicit rules of language nevertheless accord with such rules in their use of language. It is a problem with which I will deal later, although I have said much that has a bearing on this problem in earlier discussion.

I wish to draw attention once again, before going on to discuss Austin's notion of a perlocutionary act, to an important difference between Austin and myself. Although my notions of informative significance and cognitive force are closely related to Austin's notions of locution and illocution, I have not made my classification in terms of type of speech act. My classification is in terms of the sorts of significance which linguistic utterances can have. Approaching meaning in this way enables me to avoid talking about the technical requirements of a communicative act. Within a form of life, and often within certain physical contexts, the conventions governing the forms of life (and hence the language game) establish which linguistic utterances are appropriate for what sorts of linguistic act. In my terms an utterance constructed and uttered in

accordance with the relevant rules in a particular context has a particular informative significance and/or a particular cognitive force whether or not anyone reads it. In saying this I am ignoring, to quite an extent, questions about communication, although it is obvious that in most cases an utterer makes his utterance intentionally, using the appropriate (within the form of life) form of words, inflections, bodily postures etc., and his intention will be correctly read by anyone from the same form of life. But this does not deal with the problems of communicative intent, it merely goes around them. My intention is to try to establish an account of the significance of symbols (particularly language) without getting bogged down in discussion which, I believe, is best seperated from a discussion of meaning. This may leave a few loose ends and if it does then I will attempt to tie them off in my discussion of communication.

One point to be made here is that, as I have said, I don't hold that in using language we do two distinct things corresponding to informative significance and cognitive force. Neither do I see any justification for restricting meaning to cover only sense and reference (i.e. what I have called informative significance). As far as I can see the meaning of a sign must be taken as the significance which that sign has under the relevant way(s) of looking. And, for language, at least, that significance consists of both informative significance (what it says about what) and cognitive force (what it tells us about the utterer's intentions and affective states). Thus I regard myself as proposing a theory which deals with components of meaning, both components being defined conventionally in the sense that, within a form of life, certain forms of words are defined conventionally as being appropriate for certain speech acts in certain contexts. We may read other things from other's utterances, for instance social class from their grammar or geographical origin from their accent.

But these are not to be included as part of the significance of the utterances as symbol. Rather it is the case that we can read linguistic and other symbolic utterances both as symbols and as indices. I will say more about this in later discussion.

Austin's notion of a perlocutionary act is the most problematic of the three types of speech act he tried to specify. Austin wrote:

> "There is yet a further sense (C) in which to perform a locutionary act, and therein an illocutionary act, may also be to perform an act of another kind. Saying something will often, or even normally, produce certain consequential effects upon the feelings, thoughts, or actions of the audience, or of the speaker, or of other persons, and it may be done with the design, intention, or purpose of producing them; and we may then say, thinking of this, that the speaker has performed an act in the nomenclature of which reference is made either (C.a) only obliquely, or even (C.b), not at all, to the performance of the locutionary or illocutionary act. We shall call the performance of an act of this kind the performance of a perlocutionary act or perlocution. (lecture 8).

Austin gives examples, one of which is:

Act (A) or locution

He said to me, "You can't do that."

Act (B) or illocution

He protested against my doing it.

Act (C.a) or perlocution

He pulled me up, checked me.

Act (C.b)

He stopped me, he brought me to my senses etc.

He annoyed me.

A perlocutionary act is intended to produce some effect in the audience's thoughts, feelings, actions etc. If I set out to be rude to someone and they realise I am being intentionally rude, then I have performed a successful illocution, If they are offended by my rudeness, then this is irrelevant to my successful performance of an

illocutionary act and it does not identify my act as a perlocution. A felicitous perlocutionary act requires both that I intended to achieve the particular end (i.e. to offend) and that that end was achieved.

This makes it difficult to distinguish between the consequences of an illocution and the effects of a perlocution. Austin's initial attempt at distinguishing the two was to say that a formulation like, "In shouting, 'Stop!' he pleaded with me to stop," shows that shouting, "Stop!" was an illocution whereas, "By shouting, 'Stop!' he pulled me up," shows it to be a perlocution. But this distinction between, "In x-ing he y-ed," and, "By x-ing he y-ed," is problematic and not a little stipulative in a dangerous way, being tied to a particular style of English. In any case, in lecture 10 of 'How to do things with words', Austin concludes that, "... these formulas are at best very slippery tests for deciding whether an expression is an illocution as distinct from a perlocution, or neither."

The notion of a perlocutionary is the least worked out of Austin's three classes of speech act. I cannot attempt to sort out the problems it embodies, and, indeed, have no real desire to do so. Instead I wish to once again draw what I take to be the important point from Austin's notion of a perlocutionary act and embody it in a notion of my own - that of the affective force of an utterance. The difference between my notion and Austin's will be seen easiest through an example in which person A frightens person B. Suppose B is afraid of spiders and is just about to enter the bathroom. A, who knows of B's fear of spiders, says to him, "There's a spider in the bath," (S). B stops, being afraid to enter the bathroom. Of the many possibilities I will consider two:

1). There is a spider, A has seen it and wants to warn B about it. In this case A's action in uttering S is, in Austin's terms, an illocution, so long as B understands

that A is warning him.

2). There is no spider, A simply wants to keep B out of the bathroom. In this case A knows of B's fear of spiders and his intention in uttering S is to keep B out of the bathroom by making him afraid to enter. This, in Austin's terminology, seems to constitute a perlocution.

I make a break with Austin by saying that the affective force of S in both these examples is that of making B afraid. For me the question of A's intention in uttering S is irrelevant to the affective force (although not to cognitive force). For me the affective force of a sign with respect to any particular individual is the effect that sign has on that individual's affective state, feelings, emotions etc. I am making a further break with Austin in ignoring changes in actions. I do this because it seems clear to me that people act in all sorts of ways for all sorts of reasons. They may change what they are doing because they receive certain information, either about the world beyond their conversation or about the intentions, feelings and general attitudes of the person talking to them. They may also change their behaviour because what someone says to them disturbs them, upsets them or makes them happy. Thus I don't find it useful to talk in terms of the affective force of A's uttering S to B being to stop B entering the bathroom. Rather the affective force of S was to make B afraid and B then didn't enter the bathroom because he was afraid to do so. B could have refrained from entering the bathroom for any number of reasons, for Instance if A has passed on the information that the floor had just been washed and needed a few minutes to dry. In this case B's reason for changing his actions would be to do with the informative significance of A's utterance and nothing to do with anything remotely like affective force.

Affective force remains the most problematic of my own notions. Certain considerations may require me to conclude that Affective force is not part of the meaning of a symbol in the interpersonal sense in which the conventionally defined informative significance and cognitive force are.

Rather affective force might turn out to be an extra and very personal dimension to the significance of signs. This will be looked at when I discuss the detail of my own account which I will begin doing by looking at the notion of informative significance.

Informative Significance.

There is a case for arguing that the concept of information has accuracy written into it. In other words that whatever is conveyed by a false statement is not properly to be called information. Such an argument would imply that my use of 'information' in my notion of informative significance is improper. Alternative terms like 'propositional significance' might be suggested, but I want to talk about the informative significance of non-linguistic symbolic representations like graphs and blueprints and, as Scrimshaw has argued (Statements, language and art:some comments on Prof Hirst's paper), it is wrong to talk about propositions in a non-linguistic context. Thus, as far as I can see, my only course is to apologise for any violence my present use of the word 'information' may do to the ordinary language concept and state that I use the word 'information' here without prejudice to the question of whether what is conveyed is true or false, accurate or inaccurate.

The notion of informative significance is to do with the idea that information can be encoded symbolically according to rules established within a form of life. Thus the passing on of information between two people depends upon the participants in the interaction according with the same set of encoding/decoding conventions. This much is relatively unproblematic. Problems arise when we look at how people within a form of life come to accord with a particular set of rules in their use of language and other symbol systems. Ideas like Chomsky's ascription of innate knowledge of the rules of deep grammar are not particularly helpful here. In terms of Cooper's argument (given in detail in 'Meaning and Truth'- above) everyday language use is $R.F.B._2$ - it is called rule following because what people do is done as if following rules, but, in principle, there is no way of specifying

which set of rules is being followed. Thus it is impossible (in principle) for Chomsky to say what it is that we have innate knowledge of and hence his claims for innate knowledge seems unjustifiable. We do not know any set of explicit rules of language, but linguists can produce sets of rules which 'fit' linguistic behaviour, with which our everyday uses of language accord. What is needed is a genetic account of how children acquire language skills. Psychologists like Bruner and Brown are working in this area. I will make reference to their (as yet incomplete in Bruner's case) work in trying to give a genetic account of how people within a form of life are able to learn to encode and decode information symbolically, and hence give substance to my notion of the informative significance of a symbolic representation.

The first step in this process is that of learning to label aspects of the world linguistically. There is no great problem here. As Bruner's work shows shared reference is established between mother and child at a pre-linguistic stage, at first through activities like monitoring each other's direction of gaze and later through pointing. The monitoring of gaze direction seems to me to be an unlearned activity and Bruner also seems to be inclined to believe that the progression from grasping to pointing is also a matter of development. These phenomena, together with a tendency to conceptualise experiences in certain broadly similar ways (which, as I argued earlier, we must have if language is to be possible) seem to constitute the innate basis of language acquisition. The details are, of course, a matter for psychology rather than philosophy.

Given that shared reference is established before any of the child's vocalisations can plausibly be described as linguistic the problem of how a child comes to acquire his first words is rendered much less problematic. The mother uses a word like, say, 'Teddy' when both she and

her child are attending to his teddy bear and, after a while the child catches on and uses the sound, 'Teddy', to ask for the bear. Bruner, again, described how games of give and take, coming to involve 'naming', were common between his experimental subjects and their mothers (and between the children and the researchers). At this point, though, the word, 'Teddy', cannot be classified as a name or as anything else. This follows from Quine's point (in 'From a Logical Point of View') that we can only specify a child's linguistic concepts when his use of a concept-word is sufficiently sophisticated to limit the pragmatically adequate interpretation of the word as used. That the child associates the word with the object is clear at an early age, but the child will often use the word not merely as a name, he will also use the word with the force of a demand or a request. From the point of view of informative significance, however, we can say that as soon as the child's use of a particular linguistic sign becomes clearly associated with a particular object or class of objects, then its referent is established, the word is associated with a particular aspect of experience. To make this move is to ignore those aspects of language use which are not relevant to informative significance. I must again stress that this is a formal move designed to make my account more clear. I am not suggesting that acquiring the ability to encode/decode information has any psychological priority in language acquisition. The evidence suggests that it does not.

The process of acquiring first words is clearly a matter of trial and error. Brown, in his article 'How Shall a Thing be Called', (in Language' ed: Oldfield and Marshall), quotes the example of Wilhelm Stern's son Günther who created words 'psee' for leaves, trees and flowers, and 'bebau' for all animals. He also quotes Lombrose's report of a child who used 'qua qua' for both duck and water and 'afta' for drinking glass, the contents of a glass and a pane of glass. Less creative are the frequently occurring cases of children who, learning the

word 'cat' proceed to call anything furry and four legged a cat, or those who use something like 'Dadda', for all men. The narrowing down of the scope of referring words and the modification of the words themselves occurs through repeated correction by the mother. This requires the child to grasp some notion of negation but this again is unproblematic. In the pre-linguistic mother-child interactions the child learns that some actions are proper and some improper. Bruner has described games where the mother builds up a tower of building blocks and the child demolishes it. The child quickly learns to wait for completion before knocking the structure down. Bruner also describes the case of a child of seventeen months who, upon approaching a chair upon which he was not allowed to climb, was heard to mutter, "Nonononono...." in a long string. Thus an idea of negation related to a notion of what is not allowed seems to be an early acquisition.

The acquisition of first words as having referrents in the world, then, is not problematic, although the restriction of the referrent class for the various words to the range which is socially defined takes time to be achieved. But at this stage the child's linguistic capabilities are severely limited and although his repertoire may include count nouns (like book), mass nouns (like 'gas') and names for perceptual qualities (like 'red'), there is no justification for assuming that the words are differentiated in any way - that is something which comes later. Thus we can say that, at the most basic level, the informative significance of a referring word derives from its association, defined publicly and learned by a process of trial, error and correction, with some aspect of the world.

The next step in a child's early language is that of a move to 'telegraphic' speech. McNeil in an article 'The Creation of Language' (again in Oldfield and Marshall) quotes Brown's work with Adam, an American boy. Some of Adam's first sentences were:

(i) Two Boot.
(ii) Hear Tractor.
(iii) See truck, Mommy.
(iv) Adam make tower.
(v) A gas.

These utterances exhibit a number of features. First is the fact that (ii) and (iii) are examples of attention directing utterances, demonstrating that speech acts with specific cognitive force are an early linguistic phenomenon. Sentences (i), (iv) and (v) are more interesting from the point of view of informative significance. But all five examples (and most telegraphic sentences recorded according to McNeil) show a grasp of correct subject-predicate ordering. It is this jump from single word utterances to sentences in which word order is arranged according to certain simplified semantic rules that psycho-linguists claim is impossible to explain except in terms of an innate knowledge of deep grammar.

The important point is that getting the words in the right order requires that the child should possess a conceptual framework with respect to the words he knows which classifies them as words of different sorts. Once the child possesses such a classification of words he can, by grasping that his mother's sentences put the words of different sorts in certain orders, generate new sentences by fitting different words of the same class in the correct positions in sentences, the correct positions being those in which his mother puts words of that sort. The research on Adam was carried out by Brown and Bellugi (1964) who concluded that Adam had three categories of words. Words like 'boot', 'tractor', 'truck', 'mommy', 'tower' and 'gas' were used in a way which suggested that they were categorised as nouns. 'Hear, 'see', and 'make' functioned like verbs. The rest of Adam's words were classified as modifiers by Bellugi and Brown and were a mixture of types of word from the point of view of adult grammar. There was no evidence of any more subtle sub-classifications within the broad 'noun and 'verb' classes.

The establishment of the 'noun' class is, from the evidence, the initial step in language. First words tend to be labels for discrete and enduring objects of experience - this is a rudimentary notion of a noun. The establishment of a seperate class of verbs is probably made necessary by the fact that these words do not fit in easily with the 'thing'-labels which are the nouns. A word like 'make' will not readily be associatable with a particular class of object. But the child, through pre-linguistic interaction with his mother, will have some concept of 'doing', of action, even if the concept is something like, 'what an object does in achieving an effect'. Some of the words which don't work as labels for discrete objects ('nouns') will, nevertheless, work as names of actions. In grasping this the child will arrive at a seperate classification, that of 'verbs' (although the conception at this stage will be crude in the extreme).

The class of modifiers will be defined negatively for the child, as being words which are neither 'nouns' nor 'verbs'. The child will learn to use such words in so far as there is a regularity in where they occur in sentences with respect to the nouns and verbs, so that if 'a' turns up regularly before a noun in his mother's speech, that relation will be grasped. Correct ordering of nouns and verbs will similarly be achieved by imitation not of particular utterances, but of the way the mother orders her classes of word. In this way the child can acquire the habits of ordering words correctly without there being any question of his acquiring a body of theoretical knowledge about his native language's grammar. It is interesting to remark here that Bruner and others have noted that mothers tend to use a simplified mode of language when speaking to their children in which clues as to word order are not obscured by the use of more complicated grammatical constructions used by adults. Fraser, Bellugi and Brown, in an article 'Control of Grammar in Imitation, Comprehension and Production', report that in three year

olds comprehension of the passive voice (in which the order of subject and object is reversed) is very poor. This seems to be in keeping with the idea that a child's initial experiences of language are made more easily comprehensible by the mother using a simplified form of language in which the rules are much more straight forward than those of the fully fledged adult language.

Finally, in this digression into psychology, I must sketch the move from telegraphic to more syntactically whole language. What happens (according ro Bruner and others) is that the mother 'ups the ante' on communication. She will feign incomprehension of perfectly comprehensible telegraphic utterances in order to push the child towards using sentences which fit in with the normal syntactic etiquette of the form of language. The child is forced into acquiring more complex habits of speech in order to communicate.

All this may seem both sketchy and not fully relevant to what is supposed to be a discussion of informative significance. The sketchiness, I hope, will be excused. I have simply tried to give an idea of how a child might come to acquire the ability to construct novel sentences (i.e. sentences not heard by him before). I have tried to show that there is no need to explain this process by recourse to anything like innate knowledge of the deep grammar of language. As for informative significance, I believe that looking at the way in which a child makes his first steps in language suggests an account of what the informative significance of a linguistic utterance, or any symbolic representation, consists in.

I have already argued that the informative significance of individual referring words results from the association of the word, in people's minds, with a particular aspect of experience. This doesn't explain how competent language users distinguish between referring words like 'dog' and 'red', but I will leave that problem until a little later

in this discussion. The relationship between individual referring words and the world of experience, then, is that in learning to use those words we impose a particular mode of classification onto the world, each referring word labels a sub-set of experience. More complicated sentences derive their informative significance by specifying an intersection between these sets or a relation between them. 'Red door' specifies a subset of experience which is properly subsumable under the set-heading's 'red' and 'door'. Word order here is simply a matter of syntactic etiquette within the form of language. In English we say 'the red door' in French the order is different: 'la porte rouge'.

Relation words are more problematic. 'The cat is on the mat' can be reduced to 'Cat on mat' without loss of informative significance, the rest of the fully fledged sentence consists of what I have called syntactic etiquette - it is the extra trimming which is part of the way one says things and is theoretically irrelevent to the informative significance, we learn it because we want to communicate felicitously - without our linguistic advances being rejected. 'Cat' and 'mat' in 'Cat on mat' are straight forward referring words. The 'on' is a problem with which I haven't yet dealt, but I don't think it to be a particularly difficult one.

In making statements we report states of affairs (or putative states of affairs). The referring words we use pick out the relevant 'things' involved in the state of affairs, the relation words pick out relations between those things, Once a child has grasped the meanings of the referring words he can grasp the meanings of relation words by relating sentences like, say, 'cat on mat' to a state of affairs in which the cat is indeed upon the mat. The onus, of course, being on the mother to make sure it is. Thus, 'cat on mat' or, later, 'the cat is on the mat' becomes a linguistic label for a particular state of affairs <u>and</u> a way of reporting that state of

affairs to others within the form of life.

What I am suggesting is that the informative significance of a symbolic representation derives from conventions which relate the elements in the representation and the structure of it (i.e. the ordering of the elements) to a subset of the world of experience. A symbolic representation has informative significance in so far as it specifies, according to the conventions operant within a form of life, a particular subset of experience or putative experience. This suggests an approach to the truth of empirical statements. If I say, 'The front door of this house is red' (assuming that in the context of utterance 'this house' has an unambiguous referent) then I am over-specifying a state of affairs, 'The front door of this house...' specifies a subset of possible experience - we can go and look at it. The addition of '...is red' suggests that if we do go and look at the front door we will see, when we look at it, something properly describable as red. The truth of an analytic statement like "All unmarried man are bachelors' will derive simply from the fact that, according to the relevant conventions, anything labellable with the phrase 'unmarried man' will be also properly labellable with the word 'bachelor'. This, however, is a digression.

So far, in this discussion, I have laid a great deal of emphasis upon the relation between language and actual experience. This arises out of my interest in language acquisition in which process the relating of linguistic utterances to states of affairs actually perceived is of paramount importance. But language, in its fully developed form, is not tied down in any way. The fact is that once we have acquired a reasonable proficiency in a small area of language we can advance in our language skills by 'boot-strapping'- we can use language in order to learn more about language itself.

A word like 'Unicorn', for instance, has no existing referent. But it is, nevertheless a referring word. We can learn this in two main ways. We can encounter the word in use and, by its position in sentences (as a subject, say), by the fact that certain attributes are predicated of it, we can conclude that a Unicorn is a 'thing' of which certain things are true. Alternatively we can be told that a Unicorn is a horse with a single horn in the middle of its forehead - someone can define the word for us. And such a definition is creating a sub-set of putative experience for us which we can comprehend with a little imagination even though we cannot, in fact, have the experience of seeing a Unicorn. Similarly we can recognise a relation word or a verb by the ways in which it is used even though we don't understand it, and, again, we can be given an explanation in terms which we do understand.

There also symbols which have no direct relation to the world of experience, for instance those of pure mathematics and formal logic. But in everyday language we are used to words like 'and' and 'not' which, although they have no referents, perform a role within the symbolic mode. So it's not impossible, although most people find it difficult, for us to imagine a whole mode of symbolic representation in which a symbol's only significance is its role within the system. Such formal systems do not, of course, have informative significance beyond that deriving from our knowledge of the systems syntactic rules. But formal systems are like that anyway. The introduction of the notion of a formal variable having an existing reference class, as in applied mathematics, is well known to be problematical in the extreme.

Three areas of lack of clarity remain in my account so far. First I have not made clear that context plays a part in establishing the meaning of words. Some words are multivocal, for instance sensation in, " It was a strange spinning sensation," and, "This film is a sensation."

Goodman, in 'Languages of Art', suggests that we should regard such words as being examples of two symbols which have different, sometimes related, meanings but only one set of inscriptions. Alternatively we can regard such words as being one symbol with two senses. I personally find Goodman's analysis less confusing. But whatever account of multivocality is adopted it is clear that the meaning of a multivocal utterance in a context is usually clear from the context of utterance. This is not always the case - the 'imprecise' use of ambiguous terms is a common device in poetry. Other words like 'this' or 'I' depend irrevocably on the context of utterance for the specification of their referents. 'I' always refers to the utterer, except in reported speech. And words like 'this' and 'that' depend either on grammatical conventions governing which, more explicit, referring word they stand instead of or upon some extra-linguistic procedure like pointing. Such considerations do not affect my explanation of informative significance, they simply demonstrate that language is a tool which people use mainly in interpersonal communication and not merely a carefully defined system for accurate description.

The second area I have not yet covered is the question of how words become differentiated into classes like words which are the names of physical objects and words which refer to perceptual qualities. This again is a matter of context, but in the wider sense of what sorts of linguistic context those words have a use in. More familiarly we can see that such distinctions arise from the different sorts of words having a role in different language games. We can say, "Red is bright," but not "Red is big," and we can say, "Elephants are big," but not "That door is Elephant,". This may seem to reflect something about the world, but I suggest that this is not obviously so. In later discussion I will deal with the relation between our ways of describing the world and its nature, with the problem of which way of talking about some phenomenon or class of phenomena constitutes

a better understanding of the world and in what sense. It seems to be a feature of the ways in which human beings view the world that discrete and enduring physical objects are given a primacy within our ontologies. But it is a matter of contingent fact, not of logical necessity, that this is so. It may seem slightly fanciful, smacking of science fiction, to postulate a world in which physical objects don't have priority. But, as Quine has pointed out, without placing a word like 'dog' in the context of an entire language we can't be sure whether it means 'dog' in the sense which we, as initiates of a particular language, understand the word. Physical objects could be conceived as merely transitory manifestations of some permanently enduring essence - 'dog' in this mode of conceptualising being best translated into our way of conceiving as something like, "thither dogium."

It is the division of language into various language games that classifies words into different types, and the use of a word from a particular language game carries connotations with it, derived from other words, other modes of talking which are constitutive of the language game being evoked by that use. The important point here if that the fact that we say, "The leaf is green," makes it odd, but not incoherent, to imagine a language in which the same state of affairs would be properly reported by, "The green is leafy." Again this point elaborates rather than opposes my earlier account of informative significance.

Finally I have to clear up the relation between the informative significance of a symbolic representation and actual experience. I have said that the relation between symbolic representation and the world of experience is established via a system of classification, a conceptual framework, which specifies the symbol as representing a sub-set of possible or putative experience. This should not be taken as meaning that any symbolic representation which is informatively significant must define a sub-set of possible (in principle if not in fact)

experience. This is usually the case, but need not be so, as in the case of a false empirical statement which specifies a state of affairs which, on investigation, turns out not to exist.

There are other possibilities. Consider the following, remembered from my schooldays:

> One fine day, in the middle of the night,
> Two dead men got up to fight,
> Back to back, they faced each other,
> Drew their swords and shot each other.

This verse has informative content, just as the phrase, ' a square circle' has. But it cannot possibly (both in principle and in fact) describe any state of affairs which could exist. It involves intersections of sets of experience which could not possibly intersect (e.g. men facing each other back to back) and therefore although the separate parts do refer to possible experience their conjunction cannot (we can have a state of affairs A, and one $\sim A$, but $\sim (A.\sim A)$). Our reaction to such conjunctions depends upon context. In the case of the rhyme we are amused, if something of the sort turns up in a judge's summing up we are outraged. Normally the informative significance of a symbolic representation does specify a subset of possible experience. But sometimes the intersection of sets of possible experience invoked is, in principle, empty, so that there could not be an instantiation of it. For this reason it is better to say that a symbolic representation's informative significance derives from its invocation of a particular intersection/concatenation of categories of possible or putative experience, that invocation being dependant upon the reader's correctly reading referring words as the appropriate concept headings and grasping what sorts of intersections/spatial relations are specified by the representation's (syntactic in the case of language) structure. 'Putative' is included here to cover those intersections/concatenations which are, in fact, impossible by definition.

A final remark must be about referring words for which the referent's existence is problematic. Amongst such words are 'meson' and 'quark' from particle physics, and 'God'. Such words are not really problematic, they are not words learned in naming the extra-linguistic world, They are words which have a role within language and our understanding of them depends on their use within a form of language, which marks them as referring words independantly of any question of being able to point at their referents. In other words we acquire the notion of a referring word by using such words to label aspects of our experience. We then learn that referring words function in certain ways within language. And finally we identify anything which fulfills those roles as a referring word - whether or not there is anything in our experience to which that word refers.

The notion of informative significance having been discussed at length, I shall now move on to a discussion of cognitive force.

Cognitive Force.

I have already said a great deal about cognitive force in my discussion of Strawson's remarks about the conventionality of illocutionary acts. I need not reiterate my arguments for the assertion that the cognitive force of an utterance is conventionally established. But I will make some observations, that will, I believe, clarify the role of intention in purposely making an utterance with a certain cognitive force (in performing an illocutionary act in Austin's terminology).

I have said that the way an utterance with a particular informative significance gains cognitive force is by being judged as rude, or polite, or being threatening or just as being informative (which approximates to being regarded as a locution). Such judgements are made not of the utterance alone, but of the utterance in the context of utterance. And those judgements are made against a backdrop of assumptions within a form of life which can be characterised as standards of propriety - what it is proper to say in what contexts. But here a problem arises about what is judged- the utterance or the utterer's intent. It seems to me that the answer is that the utterance is judged, but together with that judgement should go the assumption that as that utterance in that context is, say, impolite, and as the utterer, being an initiate of that form of life, knows this, then it is reasonable to conclude that that person, having knowingly used a form of words which was impolite, was being intentionally impolite. And this being the case any factors suggesting that the utterer does not know what cognitive force that utterance has in that context (and within that form of life) should mitigate his impoliteness. One such factor, of course, would be if the utterer was an initiate of another form of life - particularly if that form of life uses a different language. Thus, when I visited my French pen-friend whilst at school, I was allowed to get away with addressing his father as

'tu' on occasion whereas my penfriend would have been pulled up for such lack of respect. My lapses were put down to lack of command of the French language not to a lack of respectfor my penfriend's father.

Thus, within a form of life, it is the utterance in context which has the force and the utterer's intent is deduced from this via the assumption that he knows what force the utterance has in the particular context and that he used that utterance intentionally. Any factors which explain that he did not or could not have known that his utterance in that context had that force establish that he was not being (say) intentionally rude. This is not to say that it is proper to talk about unintentional rudeness. It is to point out an important area where break-downs in communication can occur. If it is agreed that it is impolite for a guest to implicitly insult his host, then it is impolite for someone who is a guest in the house of a portrait painter, say, to make disparaging remarks about one of his hosts paintings even if he thought it was a bad portrait. But if, for some reason, the guest failed to connect host and painting, perhaps by describing a painting he saw which he thought was terrible, but the name of the painter of which he had forgotten, then he might commit the faux pas of condemning his host's work. If the guest had not made clear that he had forgotten who painted the portrait, the host and other guests might construe from his remarks that he was intentionally insulting the host. This, however, would not be the case and the unfortunate amateur critic might mitigate his rudeness later by revealing the fact that he didn't know that his host and the painter were one and the same person. In this cast the guest would not be guilty of rudeness although he might be considered guilty of excessive stupidity (or a victim of unkind fate). But the painter might continue, if the misfortune were not explained to him, to consider the guest to be an extremely unpleasant and impolite person. Such occurences, where one person's judgement of the cognitive force of

another's utterances are based on the assumption that the utterer knows something which, in fact, he doesn't know, are not at all uncommon. I would suggest, then, that for the utterer's intent to be clear, both utterer and audience must have in mind essentially the same specification of the context of utterance. If this condition is not fulfilled then misunderstandings are likely to occur.

A particularly dangerous example of this sort of midunderstanding is when initiates of different forms of life come into contact. Here both parties may begin the interaction with goodwill, each observing his own standards of polite behaviour. But a failure to grasp that what constitutes politeness is a cultural variable may lead to alienation. Thus a small town shopkeeper in France might form a poor opinion of the English because some tourist leaves his shop without the usual nod and, "Monsieur," or the same tourist might feel annoyed about a waiter who offered him coffee and then took it away when he said, "Merçi."

There is a similarity between the way an utterance reveals the utterer's intent or affective state and the way in which indices gain significance. The use of a particular utterance indicates an intent or affective state, but whereas for indices the link between sign and what is indicated is a matter of naturally occuring fact, the link between utterance and intent/affective state is a matter of convention. But there is one area where the index/symbol dichotomy is strongly linked. So far in this section I have concentrated on that aspect of cognitive force where the utterer's intent is revealed by his use of an utterance defined as having a particular force within a form of life, But there is another aspect of cognitive force - that of utterances defined as appropriate for the expression of affective states. And it is here where the strongest similarity between indices and symbols

can be found.

We can read someone's blushing or stammering as indexical of nervousness, shyness or embarrassment. The tensing of muscles and the draining of blood from the face is an index of anger. And crying or exclamations like, "Ouch!" are indices of pain. But such naturally occurring 'tell-tale signs' are also often accompanied by linguistic (and sometimes non-linguistic) symbols. And the naturally occurring indices of such affective states can even become completely suppressed and replaced by symbols defined as appropriate, within a form of life, for the expression of such states.

These alternative expressions of affective states are defined interpersonally as appropriate for the job and are cultural variables (an English speaker who hammers his thumb instead of the nail might say, "Oh Dear" or "Balls,"- a French speaker would almost certainly say, "Merde!"). And this establishes that such signs are symbols. But what is interesting is that in many cases where such utterances are used questions about utterer's intent seem inappropriate. Someone hearing a flow of invective issuing from a room where hammering has been going on will assume, probably correctly, that something has gone wrong and if the invective is preceded by a yelp of pain then they will probably have an idea about what exactly it is that has gone wrong. But this is an example of reading an utterance without the utterer having intended to communicate anything,he was just expressing pain and/or fustration.

In many contexts, though, expressions of affective stateswill be used intentionally to communicate that something has, for instance, annoyed us. An example of this is the teacher who 'hits the roof' in order to emphasise that a class has been behaving badly. This often involves the augmentation of the affective state with a little judicious acting. Many teachers regard

the ability to 'hit the roof' convincingly as a valuable part of their armoury. A display of anger or sorrow frequently has more impact on a class than a quiet and reasonable explanation of why the class behaviour was unacceptable, although such performances are best used as auxiliary to, rather than instead of, such explanations.

It can be seen, then, that cognitive force involves two distinct (but not mutually exclusive in a particular utterance) elements: the revealing of the utterer's intentions and the expression of the utterers affective states. The appropriateness of an utterance (in a context) for exhibiting intentions/expressing affective states is established conventionally within a form of life, and these conventions are not to be identified with those governing informative significance although explicit performatives can, in some (not all) instances, give the cognitive force of the utterance as part of the utterance's informative significance.

We learn to encode/decode cognitive force as we acquire language, as we learn to communicate our desires, feelings etc. in the ways accepted (and acceptable) within our form of life. Bruner's work in particular makes it clear that learning to do this is something which occurs as part of our initial strivings with language. It is important to realise, however, that language acquisition is not learning to encode/decode cognitive force and/or informative significance. Rather cognitive force and informative significance are aspects of the significance of language and learning to encode/decode them according to the relevant conventions is something we do whilst learning how to do things with words (and symbols in general) within our native form of life. And again I must repeat that although much of what I have written here and in earlier discussion has a bearing on the subject of communication, and although one of the most important things we learn how to do with words is to communicate, I have purposely avoided any detailed discussion of

communication. This will be left until later.

My discussion of cognitive force has so far been restricted predominantly to the context of language. But cognitive force, especially expressive force, is important in other modes of symbolic representation. In both the visual arts and music artists often attempt to convey feelings. A portrait or landscape is not a photograph, usually the artist attempts to express his feelings about, as well as represent, his subject. And schools of art arise in which certain conventions of expression are adhered to (although to varying degrees).

This is especially true of music. We can all recognise a love theme, a happy piece or an introspective piece. And composers make use of these established conventions in writing, often juxtaposing or even superimposing disparate elements to create an effect. Thus a happy carefree theme can be harmonised in such a way as to suggest an undercurrent of sadness or impending catastrophe. Stephen Sondheim,composer of 'A Little Night Music', stated on the television programme 'A Little Light Music' (B.B.C. 2 Feb. 19'78) that he often seeks to create a mood of ambivalence by introducing a contrast in emotional content between the words and music of his songs.

Artists use the conventions which have grown up in their cultural traditions with respect to expressive force, they do so intentionally and we can identify their intent. We can also identify the feelings expressed. These <u>are</u> conventions. The classical music of Northern India uses different musical 'utterances' to express sadness to those used by musicians raised in the European tradition. Similarly the blues, as an expression of sadness, oppression and in many cases resentment, is a product of Afro-American culture. These examples, though, introduce another dimension to the subject of expression in the arts. Elements of the blues

and the classical tradition of Northern India have both been incorporated into compositions by composers reared and trained within the European classical tradition, Ravel being a prominent example of someone who engaged in this activity. Clearly works of art can trancend cultural barriers and this raises the question of whether the significance of such works is entirely symbolic.

Symbols are defined as symbols within a form of life and that being the case someone with no knowledge of the conventions operant within the form of life cannot, in principle, understand the symbol correctly. But people do, for instance, listen to music of a culture different from their own and, because of its impact on them, make a point of learning more about it. To an extent, perhaps, this can be explained away by pointing out similarities between the sounds produced by the musicians of the two cultures (although not between the musics' cognitive force as defined within the cultures). But this seems to be unsatisfactory on two counts. Firstly there is a subjective reply that could be given. I could say that a rāga like Bhairavi, played by a master like Vilyat Khan is simply, for me, a moving sound experience without any reference to convention. This, speaking subjectively, seems to be the case (for me at least) although it is open for others to simply pooh-pooh the idea.

The second point arises from the fact of change in modes of artistic expression. Cognitive force is defined conventionally and conventions are used - I do not attempt to deny this at all. But some people don't like the current conventions and change them. They do so by producing a work of art which breaks the rules but which still, somehow, manages to communicate the artist's feelings. Could anyone, upon hearing Ligetti's 'Requiem: a mass for the dead of our time', written for the dead of Hiroshima and Nagasaki (amongst the rest), mistake the composer's sadness, horror and disgust for war? And yet the sound

of the instruments and voices have little in common with the music of, say, Bach. The conventions have changed, as do the conventions of ordinary language. Here there can be no recourse to talking about a need for ways of encoding new information, We can talk about a need for reflecting a new way of looking at war and its victims, and about a need for new ways of expressing feelings and emotions. But such talk makes no sense if we see works of art as entirely circumscribed by convention, for then to break a convention would be to produce a meaningless work or at best one with a very obscure meaning.

I am not arguing here for the abandoning of talk about convention in the expressive use of symbols. This, quite clearly, would be wrong. I have argued very strongly that cognitive force is convention-dependent and it is clear that conventions of expression exist within the arts. What I <u>am</u> arguing, though, is that an account of the expressive force of works of art cannot be entirely given in terms of conventionally defined cognitive force. Artists do, from time to time, come up with works which make about minimal use of the conventions operant within their mode of endeavour, but which still communicate something, and strongly, And the music of another culture can also, it seems to me, communicate in a way that seems to by-pass convention.

Cognitive force, as I have defined it, is the significance of a sign in terms of what it reveals about its utterer's intentions and affective states. It derives from the judgements made within a form of life about the propriety or otherwise in certain contexts, of particular utterances and thus defines what utterances are appropriate for what purposes and allows an utterer to communicate intentions and to express (intentionally or not) affective states.

It may be that we should regard meaning as entirely constituted by the areas which I have tried to cover with my notions of informative significance and cognitive

force. But, as far as I can see, such a move would constitute establishing a conceptual link between meaning and convention through stipulation. There are good reasons for doing this. The significance which symbols have, as symbols, is conventional and if we are interested in a theory of meaning for symbols, as symbols, then we must stop at the boundaries of conventions.

But, misguidedly or not, I have embarked upon an attempt to say something useful about the significance of signs. I talked earlier about the significance of indices, but in my discussion of meaning up to now, I have talked primarily about the conventionally defined significance of signs. All this is very well, but I have also pointed out that an object of experience can be an instance of more than one sign and of both an index and a symbol. I have also left open, although in doubt, the question of whether there is anything which could be classed as an icon as opposed to index or symbol. Now, faced with the question of whether the significance of a work of art can be entirely explained in terms of its being a (conventionally defined) symbol, I find myself wondering whether there is something else besides, and whether, perhaps, that something else will open up the way for talk of something that could reasonably be called iconic significance. The resolution of these problems lies in the discussion of the most problematic of my three notions I derived from Austin - that of affective force.

Affective Force.

Both informative significance and cognitive force are constituted conventionally, by certain sorts of symbolic representation being defined as having a certain significance/force within a form of life and hence appropriate for the performance of certain sorts of symbolic (including speech) acts. My notion of affective force has to do with the affective responses which signs elicit, and the first question to be looked at here is not whether words, or other symbolic representations, elicit affective responses, which they unquestionably do, but whether the eliciting of such responses is properly to be regarded as part of the significance of symbols as symbols.

Max Black, in his book 'The Labrynth of Language', makes a distinction between the emotive influence of words and what might be thought of as their emotive meaning. The latter, he argues, gains plausibility only against the back-drop of a causal theory of meaning in which the affective state is triggered by the 'stimulus' of a particular form of words. Understanding emotive meaning consists in having a disposition to respond affectively to the trigger-words and these dispositions are established through social conditioning. I don't think I need reiterate the wide range of objections to such accounts, but Black's account is not without problems. On the subject of emotive meaning he writes (P.170):

> "The crucial point is that we can understand emotive language, whether or not we are swayed by it: we don't need to share the feelings expressed in "Bitch" or "Kraut" (happily enough) in order to discern the intended force of these derogatory epithets."

From my point of view these remarks seem to be talking about what I have designated as the expressive element in cognitive force. I can agree fully with what is said, but still be unsatisfied. What I want here is some account

of how we can be swayed by emotive language, it is phenomena like this that I want to explain by recourse to some (as yet unspecified) notion of affective force. Black, in fact, has very little to offer in this direction beyond the following(again P.170):

> "..., the feeling expressed by felicitous words can no more be separated from them than can the attitudes conveyed in a Seurat painting of a picnic in the park. We respond to the affective values by a kind of sympathetic insight of which we should be hard put to give an adequate analysis; but it is beyond dispute that we can more or less adequately discern the embodied feeling. The point to be stressed is that adequate response to the emotive aspects of discourse, whose importance can hardly be overstressed, is far less a matter of brute undisciplined arousal of feelings than the causal theory, in its cruder forms, would tend to suggest."

I am in sympathy with the remarks, but they are vague. Working from the notion of cognitive force I accept that, knowing what sort of feeling is conventionally expressed by a particular symbolic representation, we would imaginatively 'feel' that feeling as a sympathetic response to it. Similarly a painting can remind us of something about which we have strong feelings and can elicit an affective response in that way. For instance Eduard Munch's figures always remind me of the pictures of inmates of concentration camps and so I find his paintings 'horrible' - in the sense that they invoke the feelings of horror I have about concentration camps - and very disquieting. And again, my dislike of the sort of political animal (in the widest sense) who talks long and encouragingly whilst saying nothing, and in the long run does very little else but spout rhetoric, means that listening to political speeches annoys me.

But although I am happy to say that the affective force of symbols can derive from nothing more than an association between the symbol and something else about which we have feelings of some sort, or from an imaginative augmentation

of cognitive force, an imaginative 'imitation' of the feelings which led the author of a symbolic representation to choose that particular one, I don't feel that this is a complete account of affective force. The imaginative augmentation of cognitive force is too much tied to established convention and therefore cannot hope to deal with the fact that we can be rocked back on our heels by a work of art which has massive impact despite breaking all the rules. The transference of affective response by association (whatever the reason for the association being made) is similarly an ineffectual explanation of such phenomena. We would be hard put to explain the impact of a Jackson Pollock painting, or the music of Cecil Taylor in terms of their reminding us of something else, although we might have fond memories of a time when we first saw or heard a work of art. And anyway this sort of association seems best described as constituting in part the connotation of the work - what, by incidental association, is invoked by experiencing the work.

Connotation, of course, is a wider notion than that of transference of affective response by association. A phrase like, "The little tramp," referring to Chaplin's most famous character, has all sorts of connotations, it evokes many features of the old silent movies as well as feelings of nostalgia. But there is no doubt that we should include the affective responses to a phrase like "the little tramp," deriving from its use in describing Chaplin's famous character, as constituting (part at least of) its affective force.

My point, though, is that the impact of some symbolic representations, in terms of affective response of an audience, doesn't seem explicable in the above terms. In literature, where words almost invariably carry some sort of informative significance, and in visual art where images are often recognisable as representations of things in the non-artistic world, this may seem

debatable. Similarly with music using the established conventions of an established tradition. But with new music, music that breaks the rules, the gaining of affective force by imaginative augmentation of cognitive force or by transferring to the music feelings about something we associate, for some reason, with that music, seems implausible.

It seems to me that there is a need for a notion of affective force which includes an acknowledgement of the fact that sometimes an experience simply does elicit a brute emotional response from us. One example would be a lover of Bach, Beethoven and Brahms who, upon stumbling upon a performance of some of Schoenberg's later works and finding himself faced with something he doesn't understand, becomes agitated and angry as a means of self protection. Contrasted with such a person might be someone without preconceptions as to what an orchestral work should sound like who finds the experience of listening to a serial composition strangely moving in ways he would be hard put to describe in words, and goes back for more. Of course, to be fair, we must contrast with both of these a third party who finds the wholething totally empty and goes home bored at the interval.

What is becoming clear in this discussion is that affective force is part of the significnace of symbols as symbols only in an indirect way. The one tie between affective force and convention is through the imaginative augmentation of cognitive force in which, knowing the (conventionally defined) force of an utterance, we can grasp the affective state(s) which led the utterer to produce that symbolic representation and hence 'feel' the same way through imagination (or perhaps, for the cynics, imagine we feel the same way).

Affective force deriving from association between symbol and something else or between the symbol and our

feelings about what it denotes is not part of the meaning of the symbol as symbol. Rather it is an extra significance written into the symbols - an association with happy times and enjoyment, say. Thus, 'the little tramp' refers to a much loved Chaplin character because it has been used for that purpose. But that character is well loved by millions of people all over the world and thus 'the little tramp' besides having the informative significance of specifying the particular, is a phrase which brings back memories of good times, which evokes pleasant feelings for all these people.

The affective force in this sense derives from the life history of individuals, what has happened to them and how they feel about various 'things' of experience. The name 'Fred Bloggs' to a man who has been cheated by someone of that name, might have the affective force of reducing him to paroxysms of rage. The name 'Emily', to a person whose daughter of that name has died, might have the affective force of reducing her to helpless tears of sorrow. And the sight of a NF banner to a man who thought Britain had got rid of facism when Mosley's brown shirts were driven off the streets might have the affective force of making him both angry and afraid. This aspect of affective force derives from the individual's affective responses to the world in which he lives. It is not conventional - it may or may not be rational. But it is an important aspect of people and in dealing with people it is important to be careful about which 'buttons' we push (not that this is a suggestion of mechanistic causality operant here).

The third way in which a sign can have affective force is simply by the fact that it 'hits' someone like that. It is predictable that such an assertion will seem out of place in a philosophical discussion, but I find it impossible to avoid in the light of what I have said about individuals' affective responses to, in particular, works of art. I am simply suggesting that certain experiences

elicit certain affective responses in certain people for no reason which can be given in terms of learning or association, it is simply the way those people, because of the sorts of people they are, respond.

There is some evidence that many of us (humans) respond to certain experiences in certain ways. Trivially a loud bang makes us jump - but I'm not talking about such events which can fully be explained in terms of the physiological mechanisms of the body. More interestingly research has suggested that we like grass, that schools with playing fields have less problems with discipline, that pastel shades on the walls of our houses make us feel relaxed whereas more vivid shades cause agitation. Going further, fast, rhythmic music seems to be regarded as more agitating to listen to than slow, legato pieces - this could be explained in terms of the agitated movements required in the performance of the former - and this is the case across cultures. If we can say that, for a great many human beings across various cultures, one sort of music makes us feel agitated, wanting to move, whilst another sort makes us feel relaxed, then is it so difficult to suggest that more precise emotions can be elicited by a wide variety of experiences in different people?

What I am trying to talk about is elusive. It is the element which makes one 'towny' feel uneasy in the country side whilst another will look at rolling moorland or woodland and will feel elated by the experience. It is also the stuff of the aesthetic experience - the experience that some people have of feeling their emotions heightened as they look at or listen to a work of art.

And, if I am accepted as talking about something real rather than as weaving phantasies, then maybe there is something here to identify as an icon - something which has significance for some individual simply because

it happens to have significance for them. A person hears the music of, say, a Duke Ellington and from then on is a fan, just because he gets a 'jolt' a 'buzz', whatever it can be called, from listening to a jazz orchestra playing those technically incorrect but emotionally satisfying voicings.

I regret not being able to argue more strongly or with more technical precision for this element of affective force. In the end I must appeal to the experience itself and say that anyone who has got lost in a book, been drawn into a painting or been put through an emotional wringer by a piece of music will know what I mean. I believe that I am talking about something real and something inexplicable in terms of my first two, less problematic, aspects of affective force. If much of my argument for this third element has been persuasive rather than rational I apologise, but I would rather be guilty of persuasion than of ignoring what I, and many others, regard as the most important aspect of a work of art.

This is the end of my section on the significance of symbols. I have tried to show that the meaning of symbols as symbols can be explicated in terms of two ways of reading them which are as being informatively significant and as ahving cognitive force. I have also tried to give as full an analysis as possible of those notions. In my notion of affective force I have tried to give an analysis of how signs in general (including both symbols and other objects of experience) can come to elicit, or just elicit, affective responses from us.

Meaning and Speech Acts.

In my discussion of meaning I have tried to show that linguistic utterances (and other symbolic representations) can, in one sense, be said to have certain significances in themselves. When we learn language we learn that certain forms of words are defined interpersonally, within a form of life, as being appropriate for the conveyance of information, say, and, in general, for the performance of certain speech acts. We learn how to encode what we know or believe in a linguistic representation which has the appropriate informative significance and we learn about what sort of utterances have what force in what contexts. In other words the interpersonally defined informative significance and cognitive force of a linguistic representation constitute the appropriateness of an utterance of that representation for the performance of particular speech acts in particular circumstances.

This reference to circumstances is, of necessity, built in to our notion of language. We don't learn to use language by learning a body of abstract theory, we learn it in situe. We learn how, in specific contexts, to do specific things with words. Informative significance is less context dependant than cognitive force, but even so a sentence like, "It's cold there," remains uninformative in the extreme in the absence of further information - for instance that it's a reply to the question, "What's it like in Siberia at Christmas?" Thus even the informative significance of a particular utterance will often remain unclear unless the utterance is seen in the context of a whole conversation. And often, as in the case of an utterance like, "It's over there," we need to see the physical context of the utterance too, the linguistic utterance lacks informative significance in the absence of augmentation by gesture - pointing or nodding the head in the appropriate direction.

Cognitive force is very context dependent, often being

derived from a notion of what it is proper to say in a particular sort of situation, for instance the notion that it is rude to contradict one's host at a dinner party. Some utterances, like swear-words, have a built in cognitive force in some forms of life (in some contexts one simply doesn't swear unless one wishes to offend) but not in others. There is also the fact that the cognitive force of an utterance may depend on the relevance of its informative significance to some state of affairs as with Strawson's example of the warning to the ice skater, and here context is all important.

What this means is that a great many utterances, viewed out of the context of utterance, are multivocal with respect to their informative significance and/or cognitive force. And even in context some sentences remain ambiguous, either by accident or design. Thus my assertion that linguistic utterances can be thought of as having significances in themselves is highly suspect if language is thought of as an entity having, in some sense, existence apart from, and prior to, its uses. It seems to me for reasons which should be clear from earlier discussion, that in my present endeavour I should resist any temptation to treat language as being an essentially formal entity (although this is not to say that the formalisation of language cannot be justified for some purposes). Any formal notion of language is a derivation from the fact of human possesion of language skills. Any apparent gap between language and its use is an illusion generated by the formalisation.

My contention is that a theory of meaning for natural languages should approach language in-situe, should look at what people do with words and explain how it is that they manage to do what they do. In other words we must explain speech acts, and it is a feature of speech acts that they are performed in the world by people with purposes. The context should never be cut off from the speech act simply because to do this is to do violence to the facts about speech acts. Language is a part of human

life and any individual's utterances are made in a context , whether that context be the physical surroundings of someone engaged in relatively inconsequential conversation or the social climate which underpins the writings of a Plato or a Voltaire. Such things as physical environment and form of life are the background to every linguistic utterance and the notions of informative significance and cognitive force are inextricably linked with a notion of context which embraces everything from the place in which the utterance is made to the form of life of which the utterer is an initiate.

All this does not necessarily mean that it would be possible to devise an explicit set of rules describing the cognitive force of utterances - (Davidson and his followers have not yet managed to produce an explicit account of even informative significance). What it means is that within a form of life there is strong agreement in central cases as to the appropriateness of certain utterances for the performance of certain speech acts although there are 'grey' areas, particularly in respect of cognitive force, in which the sort of speech act for which 'this' utterance, in 'this' context, is appropriate, is unclear.

This interpersonally defined speech-act appropriateness does not, however, completely delimit the ways in which we use language and this fact requires that I make a modification to my account so far, a modification which will introduce the intention of an utterer and will expand my account of meaning into something nearer an account of communication. As an illustration of this distinction between the meaning of an utterance (in the sense discussed earlier) and the speech act being performed I offer the following example. We are in an Embassy somewhere in central Europe, ambassador A is about to leave the building and secretary S says to him, "The weather report says there will be rain this morning, I should take a raincoat if I were you." A puts on his light

coloured raincoat and leaves. In terms of what I have called speech-act appropriateness S's utterance is properly to be seen as a statement about a weather report, a warning about possible rain and advice about what would constitute a reasonable precaution in the light of that possibility. If S were being straightforwardly helpful, as people often are, if he did hear a weather forcast predicting rain and simply wishes to warn and advise A, then his utterance constitutes a non-problematical use of language in which he has chosen a form of words defined interpersonally as appropriate for his purposes and uttered them with intent which, again in terms of interpersonally defined speech act appropriateness, is clear to anyone who understands the mode of language used. It is proper to say of S's utterance that this is how one might warn of rain and advise the wearing of a raincoat within the relevant mode of language, and if S has those intentions then he used that utterance in a way which corresponds to the notion of speech act appropriateness within the language.

Under this first interpretation of S's utterance the 'meaning' of the utterance and what S is doing uttering it coincide. But this need not be the case. Amongest the things people commonly do by way of language are lying and misleading. And in performing such actions what we do is to use linguistic representations which are defined as appropriate for particular speech acts without having the appropriate intentions and/or whilst having very different intentions. Suppose secretary S is, in fact, a spy who knows that A is getting very close to discovering that fact. S arranges to have A assasinated and tells the gunman that A will leave the embassy wearing a light coloured raincoat. In this case S's warning about rain and advice about wearing a raincoat is not uttered with any of the intentions which the utterance would normally reveal. Indeed there might not have been such a weather forecast, S's primary intention is to get A into the raincoat so as to identify him for the gunman.

What is clear from this example is that there must be normal uses for utterances, that, within a form of life, an utterance, made in a particular context, is likely to be seen as a performance of a particular speech act, and this means that this notion of what I have called speech act appropriateness defines, in central cases, the intention(s) which an utterer should have in normal cases of making 'this' sort of utterance in'this' sort of context. In the second account of S's utterance, S could only be successful if A was not suspicious of him, if he accepted S's utterance at face value and assumed that S's intentions were those which people normally have when they say something of that sort.

The idea of there being intentions, "... which people normally have when they say something of that sort," is not completely unproblematical. Someone could warn someone else of impending rain completely by accident - he could be engaging in idle conversation, mention that the weather forecast said that there was going to be rain and the person to whom he was speaking could then say something like, "I'm glad you mentioned that, I could have got wet - you did know I was going out, didn't you?" and receive an apology from the first person who both knew that there was going to be rain and that the other person was going out, and hadn't linked the two.

The important lesson from this example is that the notion of speech act apropriateness is to do with what sort(s) of thing can be or are normally, done using certain utterances in certain sorts of contexts. It is, therefore, also closely tied to the ways which people are likely to 'read' utterances, but it does not always reveal an utterer's intent accurately. This follows from the fact that people often speak idly, without thinking about what they are saying - we can be upset or offended by someone who is simply thoughtless as well as by someone who is acting purposively in saying what he says. We can though, talk in terms like, " he should have known better," which implies

that sometimes thoughtlessness is culpable, and we do excuse someone's social misdemeanours given mitigating circumstances - for instance a French child addressing his teacher as 'tu' would be punished whereas an English child who made the same mistake (on a visit to a French school) would be excused on the grounds of his speaking an unfamiliar language.

Such considerations, it seems to me, show that there is a large area of language use where the speech act appropriateness of an utterance in a specific context is fairly well defined in the sense that within the relevant form of life people will tend to see the utterance of 'this' form of words in 'this' sort of context as the performance of a particular speech act. But whether or not it <u>is</u> a performance of the speech act will depend on whether, in fact, the utterer had the appropriate intention(s). If there was no notion of propriety linked with the use of utterances, then we would find it difficult to say anything useful about the wrongness of lying. If there were no convention that a statement, when made, should be true, or at least believed to be true, then there could be no justification for anyone to be outraged when told a lie. And we would not be able to act on what we are told by others if their statements could not, in general, be expected to be true.

Out ability to read the cognitive force of others' utterances depends, it seems to me, on the existence of a body of convention or custom which defines the speech act appropriateness of a large central area of language use within a form of life. But the inference from utterance to utterer's intent is not direct. An utterance may be univocal only given the context of utterance, or it may be multivocal even then (this is often intentional in the utterances of poets and politicians, though for different reasons). Further the utterer's use of the particular utterance must be purposive <u>and</u> without ulterior motive. I say purposive because it is usually pointless to talk of

intent in idle chetter beyond an intention to be friendly and pass the time. I say without ulterior motive to draw attention to situations already mentioned in which people lie or else deceive by telling only part of the truth about some state of affairs. There is also the possibility of someone's having two (or more) intentions only one of which is revealed by his utterance. S, in my earlier example, might have intended to warn A of impending rain (assuming rain had been forecast) but only in order to 'set him up' for the gunman. Here one of S's intentions was clearly exhibited by his warning (i.e. his utterance was appropriate for the act of warning A of rain) but his other intention, that of setting A up, was not exhibited at all.

My conclusions are that a notion of speech act appropriateness is necessary to the explanation of our normal everyday grasp of language. But the notion must not be interpreted trivially as saying that there is a 1:1 correspondence between linguistic representations and the speech acts for which they are appropriate(and hence the proper intention with which they should be uttered). Rather the appropriateness of utterance U for speech act A derives from a great many factors including U's informative significance, the physical context of utterance, the social context of utterance, the states of knowledge/belief of the utterer and his audience etc. (and these factors overlap in many ways). The appropriateness of a particular U for a particular A is not always clear, we can be unsure of what someone is up to even if they are being straight forward, but for a large central area of Us and A's the appropriateness of U for the performance of A in certain contexts (in the widest sense of context) is established clearly by interpersonal agreement within a form of life. And this means that anyone uttering U in the right context will be understood as performing A. And, assuming that the person speaking is an initiate of the appropriate form of life,

the utterance of U in the appropriate context without the intent appropriate to A or with a hidden ulterior intention beyond that intent, will be regarded as a culpable act - he should have known better.

Questions about how we can know anything about someone's intentions given that anyone can use any utterance in any context in an inappropriate (or, we might say, improper) manner can only be answered by saying that, if we insist on looking at individual utterances separately, we have a lot of trouble in saying anything useful. But in fact we don't have vast amounts of trouble, and this is because we don't look at each utterance someone makes as a separate entity, to be evaluated in isolation. Speech acts are only one mode of human action, and a person's actions are not to be seen as isolated segments of his life, rather actions form sequences, overlapping strands, which together form a continuous thread. When we evaluate what someone says at a particular time and in a particular place we do so against the background of other actions (linguistic and otherwise) he has performed. And just as earlier action can colour our assessment of someone's later actions, so we can reassess an earlier action on the basis of later ones. It is also the case that different people's actions inter-relate and that what people tell us and what is the case are related. If someone turns out to be unreliable on matters of fact we know not to trust him in future.

My point is that speech act appropriateness leads us, at least in central cases, to assume, in the absence of factors which lead us to doubt his straightforwardness, that someone making an utterance (U) in certain contexts is performing a specific speech act (A) and therefore has (at least) intention (I) an intention appropriate to the performance of A. In any particular case there is a possibility of our being wrong, but speech acts aren't isolated instances, they inter-relate and have consequences, and if the consequences of a particular

interpretation of a particular U are not what we expect (e.g. if we act on 'information' received and it turns out wrong), then we know we misinterpreted, or else that the utterer's intent was not the appropriate one for the utterance of U in that context.

The notion of speech act appropriateness, then, is to do with an interpersonal agreement as to what one could properly be doing in making a particular utterance in a particular context. The important feature here is that the notion of context must be very widely interpreted to include everything from the relevant form of life to physical surroundings and the general tenor of the conversation. For instance the utterance, "If I had a face like yours I'd only go out after dark," can be a joke or can be an attempt to be offensive. The question of how an audience will read such an utterance depends on context. If it is said to a stranger in a certain tone of voice, and in a conversation where there has been some not-so-friendly disagreement, then it will be read as an attempt to be offensive. If, on the other hand, it turns up in a conversation full of jokes it will be read as such. This has nothing to do with utterers' intent- it is all too easy to make a 'joke' which falls flat and is generally seen as being in bad taste, or to offend someone unintentionally and yet leave the offended party with an impression that you intended to offend.

Speech act appropriateness which covers both informative significance and cognitive force is a matter of how 'one' should perform certain speech acts in certain contexts within a form of life. As such it provides a basis for our ability to understand from one another's utterances what our intentions are in making the utterances. It is not an infallible system - not all our utterances are made with any intent beyond that to be understood and we cannot always be sure that a particular individuals use of an utterance in a particular context is proper. But we can root out improprieties and we know not to attach too much

weight to idle chatter. Most importantly some notion of speech act appropriateness is essential if we are to explain our dislike of things like lying and misleading. Without some such notion we cannot explain why there is a presupposition that statements made should be true (indeed, such a presupposition is constitutive, in part, of speech act appropriateness).

This section has introduced a distinction between meaning and utterer's intent which will be useful when, in the next section, I discuss communication.

Communication.

In his article 'Meaning' H.P. Grice approaches the problem of meaning by contrasting usages like "Those spots mean measles," (natural meaning) with usages such as, "Three rings means the bus is full," which he calls non-natural meaning. Grice works through a number of formulations of truth criteria for 'A meant something by U' (A a person, U an utterance) before arriving at the following:

> "'A meant$_{nn}$ something by x' is (roughly) equivalent to 'A intended the utterance of x to produce some effect in an audience by means of the recognition of his intent' and we may add that to ask what A meant is to ask for a specification of the intended effect...."

This may be systematised into the following complex of intentions:

> (S: speaker; A: audience; U: utterance; i: intention)
> (i_1) S intends to produce some effect in A by uttering U.
> (i_2) S intends that A recognises i_1.
> (i_3) S intends that A's recognition of i_1 shall constitute all or part of the reasons for the intended effect to be achieved.

Such an analysis of meaning can easily be translated into an account of communication - if S produces the intended effect in A in the specified manner, then S has communicated with A. But, Grice's account is not without problems.

Strawson, in 'Intention and Convention in Speech Acts', gives a counter example to the above formulation which requires that Grice's account be reinforced by:

> (i_4) S should intend that A recognise (i_2).

In other words that not only should S intend U to produce some effect in A, he should also intend A to recognise

this intent and intend that A should recognise his (S's) intent that A should recognise his primary intent. Putting things in this clumsy way will, I think, arouse disquiet in anyone with an eye for an infinite regression. Strawson writes:

> "It is possible that further argument could be produced to show that even adding this condition is not sufficient to constitute the case as one of attempted communication. But I shall rest content for the moment with the fact that this addition at least is necessary."

And this suggests that Strawson cannot rule out the possibility of further argument requiring an (i_5) that A should recognise (i_4), and maybe i_6, i_7, ... This possibility results, according to Searle, in his book, 'Speech Acts', from Grice's failure to say anything more than he did about the effects which S seeks to achieve in uttering U. In 'Meaning' Grice uses examples like that of a policeman stopping a car by waving as paradigms of meaning$_{nn}$, and Strawson's example which introduces the necessity of (i_4) is one in which, "S intends by a certain action to induce in A the belief that p.....". Both of these fall into Austin's category of perlocutionary acts.

Searle (in his discussion of meaning P.42) claims that this confusion of perlocution and illocution is fatal to a Gricean type account. He makes a distinction between meaning and what the utterer is doing which is not wholly dissimilar to that which I made in my discussion of speech act appropriateness. He also makes the point that it is possible to communicate successfully without producing belief (or any other perlocutionary effect) and even without intending to do so - it is possible to make a statement of fact, and for that statement to be understood, without the utterer caring whether or not he is believed. Searle writes (P.47):

> "The characteristic intended effect of meaning is understanding, but understanding is not the sort of effect that is included in Grice's examples of effects. It is not a perlocutionary effect. Nor

> can we amend Grice's account so that meaning is analysed in terms of understanding. That would be too circular, for one feels that meaning and understanding are too closely tied for the latter to be the basis for an analysis of the former."

Searle (P.49) offers a revised analysis (of a statement):

> S utters sentence T and means it (i.e. means literally what he says)=
> S utters T and
> (a) S intends (i_1) the utterance U of T to produce in H the knowledge (recognition, awareness) that the states of affairs specified by (certain of) the rules of T obtain.(Call this effect the illocutionary effect, I.E.)
>
> (b) S intends U to produce I.E. by means of the recognotion of (i_1).
>
> (c) S intends that (i_1) will be recognised in virtue of (by means of) H's knowledge of (certain of) the rules governing (the elements of) T.

There are a number of problems inherent in Searle's account which, from my point of view, make it unsatisfactory. Condition (a) is problematic for Searle himself as it talks about producing knowledge, recognition or awareness in H ,".. that the states of affairs specified by (certain of) the rules of T obtain." This flies in the face of one of Searle's objections to Grice. The fact is that we can make a statement, and be understood, without trying to convince anybody of anything. If I am faced with an obstinate superior who is wrong on a matter of fact I may come to the point of stating the facts baldly as a way of passing any subsequent blame squarely on to him and without any expectation or hope that he might believe what I say, become aware of the facts (as facts) or recognise what I say as true. Searle uses an example of this sort himself (P.43).

My other objection is to condition (c), where H's

recognition of (i_1) is required to result from, "....H's knowledge of (certain of) the rules governing (the elements of) T." My objection here is not so much to what is written as to what is not written. If Searle here means knowledge of rules in the sense of Cooper's R.F.B.$_2$ then I have no objection. But R.F.B.$_2$ is rule following only in an extended sense - the behaviour is called rule following because it is like that of people whose linguistic behaviour is, demonstrably, the result of specifiable rules having been learned. And this interpretation of condition (c) is problematic for Searle's account, for H's knowledge of the rules (if H is listening to his native language) consists in nothing more than his ability to read the speaker's intent. Thus condition (c) has no explanatory power on this interpretation.

Condition (c) would have explanatory power if H's knowledge of rules was given some substance either by recourse to a Chomskyan model or in some other way. But Searle doesn't do this, he seems to regard this appeal to knowledge of the rules of language as unproblematic, which, I hope my discussion of meaning has made clear, it is not. This means that although I can make use of certain aspects of Searle's account of meaning in my efforts to say something about communication, I cannot accept his account as it stands.

I have briefly set out Grice's work and the modifications and revisions to it suggested by Strawson ans Searle without being able to agree that any one of the three suggested formulations establish a tenable account of either meaning or communication. My account of meaning stresses the instrumental nature of language and says, in effect, that the meaning of a linguistic representation is to be understood in terms of what, through interpersonal agreement, it can be used to do within a particular linguistic community. This speech act potential can be thought of as being rule governed in the sense that rules may be formulated which describes the ways in which users of a particular mode of language combine words in the

production of meaningful sentences. But, as I have argued at length, the ability of members of a linguistic community to perform felicitous speech acts should not be taken as evidence of their knowing any particular set of rules. Most people's knowledge of language is, to put it simply, practical knowledge of how to use it felicitously, not theoretical knowledge of a body of syntactic theory. The problem with communication is one of explaining the role of intention and of deciding to what extent the person being communicated with has to grasp the utterer's intent. I will make use of the work of Grice and Searle in what follows, but will modify what they have said and will make use of the terminology I have already established.

One problem with the notion of communication is that of deciding what sort of thing is properly to be contrasted with it. Is it possible, for instance, for a communication to be a lie? In one sense I think it is. A letter can sometimes be called a communication and can be full of untruths, thus a communication could be called a pack of lies. But this sense of the word is not really very useful as a philosophical term. At this point I will once again choose to stipulate what I mean by communication rather than get involved in a suspect attempt at conceptual analysis. My stipulation will be in line with that implicit in the work of Grice, Strawson and Searle, and will be to the effect that in a case of communication the form of words will be transparent with respect to cognitive force, that the words chosen will be appropriate, in the context of utterance for the exhibition of the utterer's intention(s). Thus I make communication a normative concept - one communicates only when the speech act(s) one intends to perform corresponds, in the context of utterance, with the interpersonally defined speech act appropriateness of the form of words used. This is normative because the notion of speech act appropriateness has to do with what one <u>should</u> be doing by uttering a certain form of words and not what one <u>could</u> be doing. Thus although a statement like, " I didn't break the cup," is, in one sense, an appropriate way of lying when, in fact, I did

break the cup, this sense of appropriateness is not included in my notion of speech act appropriateness. In this latter usage I take 'appropriate' to have connotations of what is proper, and, as I argued when I introduced the notion of speech act appropriateness, there must be a presumption that proper language use does not include things like lying, misleading etc., otherwise language would not be able to function usefully in the way it does.

In the light of these comments I can make a preliminary attempt at an account of what it is for a speaker, S, to communicate with an audience, A, by means of an utterance, U. First it is important to remember that S need not be making a statement, he could be telling a joke or expressing annoyance. What is important for communication is that A grasps what S is doing in uttering U and, further, that this comprehension of what S is doing results, in part at least, from A's understanding of the informative significance and/or cognitive force of U. But this isn't enough. If S is telling a lie (i.e. he intends to deceive A) he may fail because A knows both that what S says is untrue and that S knows it to be untrue. In this sense A will fully grasp S's intent and he will do so, in part, because he understood what S was saying to him (i.e. he decoded the informative significance of U). The attempt to make a distinction between a communication and a lie (or allied speech act) must therefore rest upon a further intention. In the case of a communication S must intend that A's reading of the cognitive force of U should reveal S's primary intentions in uttering U to A. This account is closely related to those of both Grice and Searle but unlike the former it talks in terms of understanding and revealing intent rather than the fatally loose 'effect' and unlike the latter it does not rely on what I feel to be a dangerously vague appeal to knowledge of the rules of language. A more formal setting out would be:

S communicates with A by uttering U =
(1) S intends (i_1) to perform a particular act

(with respect to A) by uttering U.

(2) S intends (i_2) that A will recognise that speech act (and hence i_1) because he (A) grasps the speech-act-appropriateness of U in the context of utterance.

Thus the important point in communication is that the communicator chooses a linguistic representation which not only has the appropriate informative significance and cognitive force for his purposes, but which also reveals those purposes to his audience.

There is one final addition which must be made before the above conditions actually become truth conditions for the statement, 'S communicates with A by uttering U'. A teacher might enter a classroom full of attentive pupils, draw a right angled triangle on the board (unlabelled except for the right angle, say) and then turn to the class and say, "In order to discover the length of the hypotenuse of a right angled triangle you must calculate the square root of the sum of the squares of the other two sides." Now the kids, from the context of utterance, will probably guess that the teacher is trying to teach them something, and they probably manage to get as far as the fact that this 'something' is about a right angled triangle and that the drawing on the blackboard is of such a triangle. Beyond this, however, the kids may quite possibly be lost. The teacher intends to teach his pupils about Pythagoras' theorem - he clearly satisfies condition (1). He stands at the front of the class ans (say) adopts a 'teacherish' tone of voice and the kids grasp that he is teaching (or trying to teach), so condition (2) is satisfied to some extent. But the pupils have not really arrived at an adequate understanding of what he has said. The contention here is that for communication to have taken place the communicator's audience must adequately understand what he says. And understanding is not an all or nothing affair - understanding is a matter of degree and so, therefore, is communication.

There is, however, more to be said here. The central question to be answered is that of to what degree does communication demand uptake, or, to put it another way - is communication a performance or an achievment word?. If it is a peformance word, then nothing more is involved in communication than someone having an intent to communicate - there is no demand that his efforts should be successful in the sense that whoever the communication is directed towards should understand the communicator's intent. I should add here that fully grasping a communicator's intent <u>is</u> understanding his utterance, Searle writes (P.43):

> "In speaking I attempt to communicate certain things to my hearer by getting him to recognise my intention to communicate just those things. I achieve the intended effect on the hearer by getting him to recognise my intention to achieve that effect, and as soon as the hearer recognises what it is my intention to achieve, it is generally achieved. He understands what I am saying as soon as he recognises my intention in uttering what I utter as an intention to say that thing."

If, on the other hand, communication is an achievment word, it makes no sense to talk of communication if the communicatee has not adequately understood the significance of the communicator's utterances. It seems to me that communication must be an achievment word. This will become clear if we look at other words with meanings similar to, but different from 'communicate'. We can say, for instance, of two people holding differing political views, that they spoke a great deal but hardly communicated at all, the implication being that their views were so opposed that neither really understood the real significance of what the other was saying, that the underlying systems of values of the two views were so dissimilar that understanding of either one by the other was made impossible given the tacit nature of the values and the absence of discussion of them in the conversation. We can say, of talking to a foreigner for example, "I talked a lot, but he didn't understand much of what I said," but it would be odd to say, "I communicated at

length, but he didn't understand a word of it."

It seems to me that the distinction between speaking and communication can best be made by saying that speaking is a performance in which we indulge at various times for various reasons and that communication is something which we can achieve through speaking (although also in other ways e.g. writing). In other words, communication involves uptake - if someone doesn't understand what we say adequately then we have not communicated. Examples like that of the Druical school where the Elders are bound to communicate through traditional circumlocutions and archaisms are not problematic here. To initiates of the Druidical tradition such ways of speaking are clear in meaning, to others they are not. It could be said that the Druid's ways of speaking, in common with those of many religions, are designed to communicate with initiates and to mystify anyone else - and they are successful in their purposes. Similarly the jargon used in many systematic disciplines is only an aid to communication amongst initiates - to the neophyte the use of specialist vocabulary is often a barrier to communication with the initiate, indeed learning the specialist mode of language is an important part of initiation into any systematic discipline.

If I am right in saying that communication is an achievment word, and I think I am, then part of some S communicating with some A must be A's arrival at an adequate understanding of S's utterance U. And here 'adequate' must be taken as meaning that A's reading of U must lead him to correctly grasp S's intentions in uttering U. Thus, in my example of the teacher teaching Pythagoras' theorem, The teacher has not communicated fully with his pupils unless they fully grasp his intentions and this involves fully understanding what he has said about Pythagoras' theorem. A partial understanding such as I described means that only a partial communication has been achieved - the pupils have

correctly grasped part of the teacher's intentions but not the most important part, they have not grasped what it is that the teacher intends them to learn about, namely Pythagoras' theorem.

One of the most important ways in which communication can fail is when a communicator (S) wrongly assumes that his audience (A) is an initiate of a particular mode of language. In such cases S may choose a linguistic representation (U) which, in the context, is appropriate for his purposes and, in uttering it, assume that communication has taken place. But if A is not an initiate of the appropriate mode of language then his/their reading of U is unlikely to result in the sort of grasp of S's intentions which S would have wished for. Any initiate of the relevant mode of language would, in many such cases, have fully grasped S's intention(s), but an inadequate degree of communication with A is achieved. Such problems occur in communication between native speakers and non-native speakers of natural languages and also between initiates and non-initiates of the specialist modes of language which have grown up around the systematic disciplines. Of particular interest to me is a special case of the latter situation where the initiate of a specialist way of talking is a teacher and the non-initiates his pupils. A failure to regulate carefully the amount of specialist language used can lead to a break down of communications between teacher and pupils.

What this means is that a failure to choose the form of utterance carefully so that the informative significance and cognitive force of the utterance, from the point of view of the audience, is that which exhibits the intention(s) of the utterer (whose point of view may not be that of the audience), may lead to a failure to communicate. The point is that if some S intends to communicate he must intend that his utterance U should reveal to A the intentions he has which are relevant to the communication. If A does not grasp those intentions

then S has not communicated adequately, and one way in which communication can fail is if S's choice of U is not one which has the relevent informative significance and cognitive force with respect to the form(s) of life of A. Given that, in communication, S has the active role and A the passive role, the onus must be on S to make the appropriate choice of U. This is to say that if S wants to communicate then the onus is on his to get through to A - it hardly makes sense to suggest that if S wants to communicate the onus is on A to understand him although there is a case for saying that if A doesn't understand he could be expected to let S know so that S can try again using some alternative U. I am not attempting here to impose any duty to communicate on anybody, but if, for some other reason, some S has a duty to communicate, then that duty must entail a duty to choose his U's carefully with respect to what the relevent A is likely to understand. The question of whether teachers have a duty to communicate with their pupils will be discussed later.'

Considerations such as these require the addition of a third condition to my account of communication and, for clarity, a substitution of 'informative significance and cognitive force' for 'speech act appropriateness' in condition (2). The full analysis is now:

S communicates with A by uttering U.=
(1) S intends (i_1) to perform a particular speech act (with respect to A) by uttering U.

(2) S intends (i_2) that A will recognise that speech act (and hence i_1) through grasping the informative significance and cognitive force of U (in the context of utterance.)

(3) A's interpretation of U must reveal S's i_1 to him.

It must be noted that (3) comes close to saying that the encoding/decoding conventions which S and A accord

with in their appraisal of U must be equivalent in essentials. Communication is not merely a matter of the communicator having all the right intentions - the person to whom the communication is directed must understand what is said correctly. This is not a problem in communications within a form of life, but problems can arise between forms of life. Such problems must be looked for and dealt with by careful choice of language and even, in extreme cases, by explicit discussion of intentions and meanings. Teachers in particular must, if they want to 'get through' to their pupils, be sensitive to problems arising from differences between their own habitual mode of linguistic expression and those of their pupils. A teacher, to be successful in any terms, must communicate and communication will only occur if the communicator's utterances are chosen so that they have the appropriate informative significance and cognitive force from the point of view of the person being communicated with. Part of the teachers job must, inevitably, be to change and enrich his pupil's uses of language, but such change can only be possible if the teacher begins with a mode of language comprehensible to his pupils.

A final area in need of clarification before I go on to a discussion of understanding itself is the relationship between meaning and understanding. Earlier in this section I quoted Searle who said:

> "...one feels that meaning and understanding are too closely tied for the latter to be the basis for an analysis of the former."

I agree that there is a close connection between meaning and understanding, but not that it is too close for meaning to be analysed in terms of understanding. Such an analysis would be fatally circular if it were the case that understanding involves concepts <u>and</u> that concepts are essentially linguistic entities. But, if my arguments have been correct it is wrong to see concepts as essentially language dependant and hence understanding <u>can</u> be used in an

analysis of the meaning of symbolic representations. This, in fact, is what I have done. My conclusion, in my discussion of meaning, was to the effect that the meaning of a symbol is the significance which it has within the relevent form of life. And this is the same as saying that a symbol's meaning (within a particular form of life) is the significance which it is generally understood as having by initiates of that form of life.

My general thesis throughout the whole endeavour is that it is wrong to think of language or anything else as constitutive of the human mind. I have argued that language is a tool, that the genesis of language must be dependant upon certain facts about human beings and that the notion of conceptualisation cannot be logically tied to language as, if that were the case, language acquisition would be impossible to explain except by recourse to some sort of doctrine of recollection - and such doctrines are, as I have shown, problematic in the extreme.

It seems to me that the notion of understanding lies at the basis of human life, that language and knowledge are manifestations of this basic faculty of the human mind which we call understanding. In my next section I will pursue this idea further,

Understanding.

Throughout this thesis I have tried to emphasise the primacy of the human mind for any account of signs. A central objective has been to show that an abstract discussion of signs in terms of logical structure, although possible and even useful for some purposes, is dangerous in that it is likely to obscure what I regard as an extremely important point - that signs are signs only because people can (in principle) read them and hence that signs are constituted, in part, by the conceptual abilities of human beings. My account of meaning, I hope, demonstrates this and also suggests a particular way of characterising understanding.

I wish to suggest that understanding is best seen in terms of grasping the significance of X (whatever is understood) whether X be something someone just said, a language or motorbike mechanics. And this 'grasping of significance', I suggest, is best characterised in terms of someone using a conceptual framework which picks out significant details in what is understood, which focuses his attention on relevant aspects of his experience and attaches the correct significance to them. Thus a man who understands motorcycle mechanics will possess a conceptual framework which will direct his attention to certain parts of his motorcycle and enable him to make such judgements as, "That's O.K.," "That will need replacing soon," "If you don't replace that you're going to have a nasty accident," etc.

This characterisation of what constitutes an understanding of motorbikes does seem unusual, we would usually say that someone knows a lot about such things in the sense of theoretical knowledge. But such characterisations, although perfectly proper, are dangerous in the hands of philosophers who have a tendancy to over-stress the role of theory. Whilst the man who

services my motorbike undoubtedly does possess a lot of theoretical knowledge, much of which he can state, the important difference between him and myself is not that he possesses theoretical knowledge that I don't. The important difference is that he can find faults or near-faults which I don't notice. I go to him mainly because after a ride down the road and a five minute inspection, he can suggest minor repairs which I had never thought about but which would become major repairs if left undone. I take my machine to him not merely because he knows (theoretically) more than I do, but because he sees things I miss. What I am leading towards here is something like Polanyi's (Personal Knowledge) idea that understanding is not fully characterisable in terms of proposit ional knowledge. Such knowledge is part of understanding, but understanding must consist primarily in what I wish to call conceptual skills, skills involved in picking out relevant detail and attaching the correct significance to it. In other words an important part of understanding is the ability to read various aspects of what is understood as signs and to act appropriately, and in this, as I have already argued, the possession of the relevant conceptual framework is central whether the sign is index or symbol. For now I intend to leave hanging the question of what makes this or that conceptual framework relevant. I will come back to this problem in later discussion.

At this point, however, I am going to tackle the problem of the relationship between undertanding and knowledge. In particular I will look at the account which Hamlyn gives in his book, 'Experience and the Growth of Understanding' of the relationship between knowledge and concepts.

Knowledge and Understanding.

At the beginning of chapter six of his book Hamlyn writes:

> "I have said more than once already that, as I understand the matter, to have the concept of X is to know what it is for something to be X, and that this can be a matter of degree since one can have knowledge of some aspects of X without necessarily knowing others. To have a concept of X is to believe something about what it is for something to be X, and this belief may or may not be right. To the extent that we can speak of the correct or right understanding of something, we can speak of the concept of that thing and the concept is therefore objective and shareable with others. Belief presupposes knowledge to the extent that one must know what it is that one is believing about and what it is for something to be what that thing is believed to be. Thus it seems to follow that one cannot have a concept of something unless one has the concept of something or other (though not necessarily of that which one has a concept). A subjective understanding presupposes participation in a public and objective understanding at some point; it is in this sense that it presupposes knowledge." (p.74)

Hamlyn accepts that perception presupposes concepts and believes that concepts presuppose knowledge and hence that perception presupposes knowledge although he is careful to say that this presupposition is logical and not necessarily temporal. In an attempt to avoid any suspicion that this point of view might lead to talk of innate knowledge, and realizing that learning involves perception, he makes a distinction between learning and coming to know. On page 91 Hamlyn writes.

> "We may say, 'I came to know at that point that it was so, although I did not recognize at the time that I did know it.' I want to emphasize this point, since it follows from it that there is certainly no need for us to assume that if the child comes to know something he must know or be aware that he does know whatever it is. Provided - and this is an extremely important proviso - the child is in a position to have knowledge at all, then if he or she distinguishes between X and Y (in whatever way this is revealed in behaviour), if there is indeed a difference between X and Y, and if the child's distinguishing X and Y is not a chance event (however this too is revealed in the behaviour of

> the child in the circumstances), then we might well have sufficient grounds for saying that he or she has come to know the difference between X and Y.
>
> .....On the other hand, to say that the child has learned that X and Y are different would be to imply rather more: that the child has come through experience to connect this point with other things that he or she knows, and that these other things are the basis of the learning. One might indeed say that learning is connecting items of knowledge in the way specified, whereas not all this is implied in simply coming to know."

If these two rather lengthy quotes are compared it becomes clear that Hamlyn's account still has very great problems. For Hamlyn being able to distinguish (non-accidentally) between X's and Y's is evidence of the distinguisher's having come to know. But, surely, being able to distinguish between objects of experience as being of different kinds involves concept application and, according to Hamlyn, concepts presuppose knowledge. Thus, if I have grasped Hamlyn's meaning correctly, coming to know involves acquiring concepts and acquiring concepts involves coming to know. This two way impication suggests that coming to know and concept acquisition can only occur simultaneously. And this fact, together with the absence of any clear criteria distinguishing the two, makes it seem possible that they are the same thing. It seems to me that the problem here is solvable only if we shift perpective slightly and say that talk of knowing and talk about the possession of concepts or conceptual skills are, for the most part, interchangable ways of talking about certain functions of the human mind. It further seems to me that on a closer scrutiny Hamlyn's distinction between coming to know and learning is problematic and that my approach, in terms of the development of conceptual skills, has greater range and explanatory power than Hamlyn's more traditionally epistemological approach.

First the distinction between learning and coming to know. I have argued that, for language to be a possibilty, human beings must naturally tend to pick out certain

aspects of experience as significant. This tendancy, as far as I can see, need not be anything spectacular, it could arise from something as basic as the biological nature of the human organism. A child could learn to distinguish food by association with the satisfaction of hunger, and learn to recognise his mother by her association with food (which she provides) and because she cuddles him. This process of coming to attach significance to objects of experience because of their association with naturally significant states such as hunger and its satisfaction, pain and its relief, warmth etc., seems to me to be properly describable as learning. The statements, 'That baby can distinguish its mother,' and, 'That baby knows its mother,' seem, to me, to have some informative significance. My notion of learning does not satisfy Hamlyn's criterion,'.... that the child has come through experience to connect this point with other things that he or she knows...', although it does satisfy the requirement, '... that these other things are the basis of the learning.' This is because although the naturally significant states (eg. hunger) provide the basis for learning to distinguish certain objects of experience (learning in my sense), they themselves are not to be regarded as objects of knowing. Sensations are not things we have that, by some inner mysterious perception, we can come to know. To say, 'I know I am in pain/hungry,' is to say no more than, 'I am in pain/hungry,' and, further more, is philosophically dangerous. This point comes from Wittgenstein and was fully discussed in my earlier discussion of the private language argument.

Hamlyn could, it is true, stipulate that the first steps from naturally significant states to discriminating between objects of experience should be called coming to know and that only later steps should be properly designated as learning. But this serves only to obscure the continuity of a child's conceptual growth, a process in which new objects of experience gain significance through their

association with already significant objects of experience - a process grounded in naturally significant states like hunger etc. which are significant for human beings because of our nature. I must stress here that, philosophically speaking, all I have established is that for language acquisition to occur there must be some things that just are naturally significant - exactly what these things are is a matter for psychology, my speculations here are illustrations, suggestions about possibilities and should not be taken as assertions of empirical fact.

This line of argument also shows that Hamlyn's assertion, '...to have the concept of an X is to know what it is for something to be an X,' is misleading if taken in the way his further assertions (in the first quote of this section) show him to take it. In particular at the 'basement' level of conceptualisation, the basis for linking objects of experience with naturally significant states, the child just is hungry or cold or in pain and it distinguishes between those states. Later when the child distinguishes his mother, his feed bottle or a favourite toy, we can talk about him knowing that 'this' is his mother, but this is only an alternative way of saying that the child's conceptual development has reached a stage at which he picks out his mother as an object of experience with special significance.

So far, though, the tension between my account and Hamlyn's might be seen as little more than a matter of terminology. On p.98 he writes:

> "I have said that anything that the young child can be aware of must be initially undifferentiated; that is to say that it will be for the child nothing in particular and everything in general. It is doubtful, however, if that can really be true, since the human child is born with a natural constitution which brings with it natural dispositions and ways of response to things."

The knowledge which the child acquires because of these 'natural dispositions and ways of response,' is

explained by Hamlyn as being acquired through 'coming to know' rather than through learning and it is clear that this distinction can be made even if I don't like making it. But there is more to our disagreement than different preferences in terminology. I have adopted a notion of what a concept is which makes the possession of the concept of an X a matter of being able to pick out correctly those objects of experience which are X's and to ascribe the correct significance to them in terms of recognising them as objects for certain kinds of appropriate behaviour, certain appropriate attitudes etc. Hamlyn analyses possessing the concept of an X in terms of knowing what it is to be an X. Thus, for Hamlyn, concept acquisition occurs only at the point of coming to know whereas I am prepared to talk about innate concepts. On my account of what a concept consists in, the fact that babies are born able to attach the correct significance to certain experiences means that theybring certain concepts with them.

I want to argue for my view of concepts by suggesting that Hamlyn's account has insuperable problems, problems which his distinction between having a concept of some X as opposed to having the concept of it is designed (I think) to overcome but doesn't. Having any concept of something, for Hamlyn, involves being, '...in the position to accept truth as truth, and this must be in the position to recognise correction and correction.'(p.92) I'm not sure how much is written into this and whether it's really necessary to talk in terms of truth and correction in a situation where a child learns (eg) that it can't crawl through walls by crawling into a wall and rebounding (painfully). But if Hamlyn's formulation can include such occurences as part of infant learning I will not quibble with him. My point is that we cannot insist that accepting truth as truth and recognising correction as correction must always involve becoming a party to convention even if it does in a very large and important

class of learning situations. We can learn much about the world by simply colliding with it (both literally and metaphorically.)

My real objection to Hamlyn's account of concept possession, however, comes from my belief that, despite his obvious intentions to the contrary, he hasn't really escaped from the problems which arise from tying concepts too closely to language. On pages 78 and 79 of his book he discusses what is involved in possessing the concept of a clutch (as in a car without automatic transmission). He writes (p.78):

> "Knowledge of an X may, however, be a matter of degree, as I have already said, and it may find application to cases in various ways. There is a sense in which someone may, for example, know what a clutch on a car is without being able to give any account of what it is, in that he is able to get in to a car... and drive it away, using the clutch in the process."

Here we have an example of someone having a concept of a clutch but not the concept. Hamlyn continues by saying that someone who could give an account which, normally, we would understand as reflecting an understanding of what a clutch is, but who got into a car (with a clutch) and tried to drive it away without using the clutch would (if he wasn't a superior driver who could drive without using the clutch) thereby reveal that he lacked a full understanding of what a clutch is. He concludes (p.79):

> "Understanding what a clutch is in the full sense involves not only being able in principle to give an account of what it is but also being able in principle to recognise a clutch as an object for certain appropriate forms of behaviour."

It seems fair to interpret this discussion of Hamlyn's as concluding that having the concept of an X involves both being able to distinguish X's as objects for certain forms of behaviour and being able to give an account of

what an X is. This sits ill with what he wrote on p.74 (I give the full quote at the beginning of this section):

> "Thus it seems to follow that one cannot have a concept of something unless one has the concept of something or other (though not necessarily of that of which one has a concept)".

Taking these assertions together we find that under Hamlyn's account someone cannot possess any concepts at all unless he has the concept (as opposed to a concept) of some X (whatever X may be). Further, anyone who possesses the concept of some X must, in principle, be able to give an account of what it is to be X.

It seems possible that Hamlyn wrote the (in principle) giving of an account of what a clutch is into his account of fully possessing the concept because he has confused two problems. The first is the problem of what is involved in someone possessing a concept, the second is the problem of how we can know that someone possesses a concept. Following on from what he says about possessing the concept of a clutch in the full sense (on p.79) he says:

> "The complexities of the knowledge involved in this indicate how implausible it is to suppose that an account of what it is to have a concept can be provided in terms of a pattern of response to stimuli or in terms simply of the occurance of a mental event. Even the suggestion that having a concept involves structuring things seems in this context rather thin, since the knowledge involved in having the concept is capable of manifestation in a variety of ways and cannot be achieved/conceived in terms of any one way of structuring the world."

Here Hamlyn seems to echo David Cooper in writing specifiability into concept possession - I argued in earlier discussion that this is a mistake.

But this is a digression. Hamlyn says that pre-linguistic children (and some animals) can have concepts, he also says (in the quote from p.74) that possession of any concepts presupposes the possession of the concept of something or other, and he also says (P 79) that possessing the concept of

something involves in principle being able to give an account of what it is. This 'in principle' is difficult to be sure about, but in the context of his whole argument one job it must do is to allow pre-linguistic children into the community of 'concept-possessors' by saying that although they can't use language at the pre-linguistic stage (by definition), this is only a matter of contingent fact and that, since they are potential language users, since they will acquire language, they will, at some point, be able to give an account of their understanding. If this sounds like so much gibberish I apologise, I'm just trying to imagine how we might attempt to rescue Hamlyn's account of concept possession. The attempt fails, however, because it ignores a central fact about language acquisition.

It is clear from the account of many psychologists and philosophers (some of whom I have referred to in earlier discussion) that language acquisition in itself requires a modification of the child's conceptual repertoire. The literature is full of examples of young children whose use of language reveals a failure to observe distinctions we normally make in the use of words, from calling anything four-legged-and-furry 'doggy' to more elaborate inventions like the use of 'psee' for leaves, trees and flowers, 'bebau' for all animals and 'qua-qua' for both duck and water (quoted in R. Brown's article 'How shall a thing be called' p.89).

In other words, both on my account and Hamlyn's, by the time a child has sufficient skill with language to give an account of his understanding of anything, his ways of conceiving the world will, in fact and in principle, have been modified to fit the conceptual framework enshrined within his native language. And here 'in principle' means that if the child's conceptual framework was not modified, then, as a matter of logic, he would not be able to use language as, at the level of first words, if the child never came to classify (eg.) all dogs together as members of the same class he would never be able to

use the word 'dog' correctly. Thus a pre-linguistic child, in principle,is unable to give any account of his understanding of the world as, by the time he can give any sort of account at all, his ways of conceiving the world will have altered. This seems to lead to the conclusion that, in the absence of language we cannot properly talk about concepts, knowledge or understanding, although this is clearly not what Hamlyn wants to say.

I have already argued for my notion of a concept and see no reason for modifying it. I believe also that my comments on Hamlyn's account of knowledge and understanding show that his analysis of concept possession has inadequacies. My contention is that my own approach is better for the task at hand - although this assertion itself is one that will have to be clarified in later discussion.

Before moving on to further discussion of understanding I will try to derive the bare bones of an account of knowing from my own account of understanding as the possession of a framework of conceptual skills which we use to discover the significance of objects of experience and hence to read them as signs.

In my discussion of informative significance I said that the truth of a statement is a matter of its over specification of some aspect of experience such that a state of affairs is specified and then stated to be subsumable under certain further concept headings. If all the predicated concepts are properly applicable to the state of affairs specified then the statement is true (and the state of affairs specified can be language). This is a crude account (the topic will be discussed more thoroughly later) of the first condition for the truth of 'P knows that S' (P a person, S a statement) which is that S must be true. Here is not the place to go into long discussions of knowledge and belief or of causal theories of knowledge. Instead I will use a second condition.

'P must be non-accidentally right about S' and will not go into the mass of problems which would arise in a detailed explication of the non-accidentally' clause.

What I want to suggest is that P's being right about S is a matter of his subsuming the state of affairs which S (which is true) is about under the same concepts as S subsumes it. For a language user this is fairly straightforward as, if he uses the language in which S is made, he will (provided he is capable of grasping the informative significance of S) possess all the relevant concepts and if he has conceptualised that aspect of the world in that way he will know that S, even if he has never uttered S, or even if he would never have used quite those words to express that informative significance. Difficulties arise when we make statements across cultural boundaries. Anthropologists have long said this - it is problematic to describe a cannibal as being wrong or to say that he must know that he's doing wrong. This, again, will be gone into more thoroughly in later discussion.

Difficulties also arise when we ascribe particular knowledge to pre-linguistic children. This is a point I have been over before; to say that a baby recognises its mother is to say that it picks out, as having some special significance, that object of experience which we, correctly, describe as its mother. But to say that is not to say that the child's conception of its mother is the same as that which a language user understands ' as the meaning of 'mother'. Neither must we make too many assumptions about what significance a baby attaches to its mother. I have speculated on the subject of what it might be that is naturally significant to a human being, and I think that my speculations are both plausible and consistent with much of the relevant psychology I have read. But philosophically speaking all that can be established (if my earlier arguments are correct) is that somethings <u>must</u> be naturally significant

for all normal human beings if language is to be possible. The job of specifying exactly what is naturally significant is an empirical one, properly to be done by psychologists.

The difficulty of specifying what someone does or does not know, however, does not constitute a weakness in my account. As Hamlyn points out, (in the second quote in this section) a man may know and yet be unaware of his knowing. If this is true, which I believe it to be, then there is no difficulty in saying that someone may know something that I not only do not know but am incapable of knowing - there are a great many mathematicians and mathematical physicists who are in that class of people 'though I wish they were not. And this is to say that maybe, as a matter of fact, I am incapable of acquiring certain concepts and hence incapable of knowing certain things because I can neither look at the world in that way, nor fully understand any symbolic representation used within that way of looking.

Understanding,then,can be viewed in terms of the possession of a conceptual framework relevant to what is understood (and the analysis of this 'relevant' will be given later). The possession of,and ability to apply correctly, the relevant conceptual framework (to use the relevant conceptual skills) is to understand the particular object of understanding - for to understand is to understand something. Knowing on the other hand appears in my account as a particular application of this more general understanding, when the framework is used to make comprehensible a particular aspect of experience. A true statement is a linguistic encoding of the information known by the knower, a linguistic representation which, by the relevant conventions, has that particular informative significance.

Language and Understanding.

As we become more expert with language the world becomes more densely populated with significant detail. The acquisition of a new referring word involves not only being able to use that word correctly in sentences it also involves being able to recognise what it is that the word refers to, which aspects of experience are properly labellable by that word. As is clear from the psychological date referred to earlier, learning new words involves learning to classify experience in new ways, which is to say that the fact of getting further into language unavoidably carries with it a necessity for conceptual change as new 'settings' are accomodated.

Thus each step into language involves a conceptual accomodation, a change in ways of looking, which allows the initiate to attach significance to new words in terms of their grammatical function, and reference - class (where applicable). But, of course, all this talk of new words is a little misleading if it is not remembered that we don't learn theories, we learn how to use words. This is to say that conceptual adjustments we make as we become more deeply initiated into the mysteries of language are not to be thought of in general, as the learning of some theoretical framework. We learn, by trial and error, how to perform linguistic acts and how to interpret others' linguistic acts. A framework of explicit theory may parallel the conceptual framework of an adult language user, but the language user does not necessarily know the theory - his conceptual framework is functionally equivalent to that encoded in the theorists' rules, nothing can be said beyond this. Nevertheless explicit theory is an important part of human understanding and my central purpose in this section is to attempt to say something about the steps involved in moving from the language of everyday life towards the more restricted languages of the systematic disciplines and to show how, and in what sense, this process can be

a way of increasing someone's understanding.

A key notion in what I want to say will be that of a language game. I want to talk about the systematic disciplines taking language games from ordinary language and developing them into specialist language games or even, as in subjects like geography, welding together bits and pieces from other language games (including specialist ones) into a mode of language suitable for the purposes of geographers. But this requires that I first establish what I mean by 'language game'. The term, of course, is Wittgenstein's, but although I will discuss his ideas I must stress that what I am after here is a coherent notion of what a language game can be taken to be that is useful for my purposes. There will be no attempt, except in passing remarks, to give a critique of Wittgenstein's notion or, what this would entail, to give an exegesis of Wittgenstein's account of language games.

Rhees, in his article "Wittgenstein's Builders" (Proc. Arist. Soc. '59 - '60), objects to Wittgenstein's account of the builders (at the beginning of Philosophical Investigations) on the grounds that such a system of signals does not come up to the mark as a language. The central objection here (if I have grasped the point correctly) is that Wittgenstein's conception of a language game as being constituted through agreement in reaction to certain signs within a form of life is too thin. Rhees wants to say that a form of life and its associated mode of language are much richer than Wittgenstein requires of his notion of a language game and hence that Wittgenstein's notion does not do justice to language in the real world.

I am not certain that Rhees' characterisation of Wittgenstein's ideas is wholly accurate, but Rhees did study under Wittgenstein and is therefore more likely to be right than myself. I will therefore bow to Rhees' greater authority and express agreement with him on the

point that more than agreement in reaction is needed to establish a notion of language games which will be useful in reaching an understanding of language as it is used.

The question of how a language game is constituted and the question of in what way a language is differentiated into language games are closely related, and the task of answering these questions is not easy. Wittgenstein himself was not very helpful here - Rhees writes (P. 176):

> ".... Wittgenstein did say in the Brown Book, for instance, that the various language games he had mentioned as making up a language were to be regarded, 'not as incomplete parts of language, but as languages complete in themselves, as complete systems of human communication '(P.81)."

and goes on to point out that the idea of philosophical mistakes arising from, for instance, the confusion of the language games of physical objects and sensations through attaching undue weight to grammatical similarities seems intelligible only if the different language games are part of the same language in some sense. If language is nothing more than a collection of language games then the notion of different language games belonging to the same language needs clarification, and Wittgenstein doesn't provide this.

Anthony Kenny, in chapter nine of his book, 'Wittgenstein', draws attention to further problems which arise from consideration of Wittgenstein's examples of langauge games in Philosophical Investigations, Kenny suggests that contrasting the language games of statements or questions with those of measurement or language games with the word 'game' shows some confusion in the notion as a set of measurements or the word 'game' can occur in statements or questions.

I am not convinced completely by these arguments, but

my lack of conviction stems largely from a lack of confidence in any particular interpretation of Wittgenstein. Wittgenstein's writings are, it seems to me, too cryptic to ever allow us to be sure that 'this' is what he meant. The strength of his later writings lies in their suggestiveness rather than in any presentation of a carefully argued thesis. I find the notion of a language game very suggestive, if rather vague. This being the case I shall take a course here very similar to that I took in my discussion of the private language argument namely that of trying to establish my own notion of a language game.

The first problem to be tackled must be that of how to look at language, only then can I move towards a differentiation of different modes of language, different language games. When I discussed meaning I said that we could only give an explanation of how linguistic signs have meaning for people if we looked at language as being something that people use. People do not acquire a body of syntactic knowledge, they learn how to do things by means of linguistic signs. In order to perform felicitous speech acts we must learn how to order words in the appropriate ways, for if we don't say the right words in the right order people will not grasp our meaning, we will fail to perform our speech acts felicitously.

In this way we come to do things by using a certain vocabulary (i.e. making the appropriate vocal noises) and by ordering that vocabulary (those noises) in certain ways. We come to accord with certain rules of syntax. That sets of explicit rules do parallel the syntax of our speech does not, as I have argued, establish anything about our knowing (except in an analogical sense) such rules. An explicit set of rules, written down symbolically, can encode a conceptual framework which is functionally equivalent to that of a native speaker of a particular mode of language, but this does not

entail that the speaker is following that particular set of rules (or indeed any explicit set of rules). A particular language can, however, be looked at as being unified by having a central core of vocabulary and of syntactic rules. If a number of different groups of people, different in respect of geographic location or occupation or in any other non-linguistic sense, speak to one another (i.e. within individual groups) using similar sets of linguistic signs and according with similar syntactic rules, then they can properly be regarded as speaking the same language.

There are problems here, but not, I think, insuperable ones. Different dialects of English do show a variance in grammar, but they do share what Wittgenstein called a family resemblance and most actually do share certain grammatical features - syntax is not a problem. The main problem is in talking of different groups using similar linguistic signs. The inscriptions of symbols can vary greatly between dialects of English, so that a broad Glasweigian accent is virtually incomprehensible to other English speakers, and similar observations can be made about a broad Jamaican accent. This problem can, however, be overcome by familiarity, we can recognise, after a while, that we are simply hearing unusual (to us) inscriptions of symbols we know.

A symbol is the set of its inscriptions and the set is defined by all inscriptions sharing the same significance. The notion of shared linguistic signs, then, has to do with the symbols of the different groups of language users having similar sets of inscriptions and shared significances in central cases. And this means that, broadly speaking, the different groups must share a common core mode of conceptualisation, more, I suggest, in the area of the informative significance of utterances than in that of cognitive force which has more tendency to regional variation. I say 'in central cases' because

individual quirks in some areas of symbolisation need not indicate differences in language any more than local oddities in certain areas of syntax.

What we need, then, to establish that different groups share a language, is a fairly close similarity in syntax, and a shared set of symbols with fairly similar sets of inscriptions (we cannot use writing as a criterion here as many primitive groups still exists who simply have no written language). There is quite a lot of vagueness here, but I don't think that it is either fatal or avoidable. It is not fatal because we can talk in terms of family resemblance in which the syntax and/or modes of conception and/or inscriptions of all the various groups don't need to share common features, they simply need to form a linked system. Wittgenstein's metaphore was that of the strands of a rope which are not all interconnected and yet form a unity. The vagueness is inescapable because the edges of, say, the English language are not sharply defined. Some dialects are so far from the mainstream of English that although relationships can be seen to exist we feel wary of calling them the same language. I am thinking of the more extreme version of Jamaican patois which seems not to fall easily into the model of being English with a few unique rules of syntax and a different accent on the symbols' inscriptions and then there is Pidgin English which is so truncated in both syntax and vocabulary as to seem more like a code than a full language.

My suggestion is that looked at from the point of view of syntax and vocabulary in the way just outlined we can give an account of what a language is and assert the unity of, say, the English language. But looked at from another point of view, that of what can be said about what, languages fragment and the barriers between languages (in the syntax and vocabulary sense) disappear. Thus English anf French can be said to embody the same language games in so far as a 'what can be said about what' criterion fragments the two languages into similar

sets of words, or rather into similar sets of concepts.

The implication of what I've said so far is that there is a logical gap between a language game way of looking at language and the ways of looking used by grammarians and logicians. But in fact this apparent gap just isn't there. In particular the notion of groups of people using the same vocabulary (in central cases) seems to require reference to some sort of notion of a language game. A word is a symbol and, as I said earlier, we must regard a symbol as being a set of inscriptions, a set defined by those inscriptions having a shared significance. This means that an assertion that different groups share a vocabulary can only be supported by showing that the words used are, in fact, properly to be called instances of the same symbol. Thus we must look at what we mean when we talk of different linguistic signs having a shared significance. In the case of referring words we could take 'same significance' to mean 'same reference class', but this is inadequate as clearly 'human being' and 'featherless biped' have co-extensive reference classes but not the same significance, and anyway words like 'and' and 'not' couldn't be dealt with in this way. It seems to me that we can only unify symbols in terms of what, in principle, we can use inscriptions of them to do- in terms of their speech act appropriateness within a form of life.

This speech act appropriateness (covering both informative and cognitive force) leads us towards a notion of language games. It leads us to looking at what can be said about what. If 'this' symbol is the same as 'that' symbol it will be appropriate to use inscriptions of them is the same sorts of sentences, what can be said using the one will be sayable using the other. So to show that two groups <u>are</u> sharing vocabulary we must show that not only are the inscriptions similar, but that, taken as instances of their symbols, they fit into the same sort of sentences, do the same job. Thus if we found a community of apparently English speaking people

who used the words 'time' and 'space' in the way the Hopis use them, so that the words only have a role in sentences where time is linked with expectation and space with action, we might be forced to conclude that those people understand 'time' and 'space' differently to the way English speakers normally understand those words. There are difficulties here which arise from questions about over-literal translation, for instance the fact that in Japanese 'night fall' becomes 'the falling of the night' with 'the falling' being used as a noun doesn't necessarily mean that the Japanese think of 'a falling' as an entity of the same sort as 'a brick'. Grammatical differences don't imply conceptual differences - to establish conceptual differences we must show that the links between concepts are structured differently by the different groups of language users. The Hopis' linking of time with expectation and space with action (its difficulty and complexity) is what shows that they conceive of space and time differently to the way English speakers conceive of space and time.

There is also the question of belief, whether it makes sense to talk of shared language games but different beliefs. In one sense it doesn't, although people whose beliefs differ to some extent can discuss their differences so long as there are areas where they don't differ. The point is that talking about the world as being a world of physical objects (say) is, to some extent, a matter of belief. We are never absolutely certain that a particular way of conceiving things is the right way, all we know is that looking at the world in 'this' way leads us to have certain expectations of it and that in so far as these expectations are fulfilled it seems reasonable to assume that the way of looking we're using captures the nature of the world to some degree. Being committed to any way of looking involves belief in the sense that it involves accepting certain metaphysical assumptions which we become happier with as our expectations are fulfilled, our actions

successful. Such beliefs are like a working hypothesis in the sciences, we're never absolutely certain we're right but as long as looking at things in a particular way leads to success the rational course is to go on using that way of looking. This is an over-simplified account, it will be structured more thoroughly in my next section. But the central point for my account here is that being committed to looking at the world in any particular way involves holding certain beliefs about the world (although this way of talking, as I argued in the previous section, can be dangerous when we are looking at the early development of children). Sharing a language game usually involves sharing basic presuppositions and hence beliefs, and these may be held uncritically as is often the case in ordinary language (and sometimes the case in the systematic disciplines) or critically as is the case with a researcher reaching out beyond established ways of looking. There is also the possibility of using a way of looking without believing in it, for instance working on the assumption that 'this' way of looking does capture some aspect of the world in order to test it, to try it out, but such an attitude is one which ultimately leads to acceptance or rejection of the way of looking and is most usually found in the specialist discipline, not everyday life . Someone who takes this stance is holding himself apart from the community of belief.

Sharing a language, in so far as it involves sharing a vocabulary, must involve sharing language games and hence beliefs. But again I must stress the notion of family resemblance and the fact that the 'edges' of a language are usually blurred. So not all native speakers of a language need to share identical beliefs about the nature of the world, rather there will be a continuity of belief systems. It does seem likely however, that at some levels, for instance the nature of the world as a physical system, the vast majority of, say, English speakers (and, indeed, of language users in general) are likely to share one language game. In terms of interpersonal behaviour and moral discourse,

however, the diversity of beliefs is almost certainly much greater.

I should also point out that differences in beliefs don't necessarily lead to lack of communication. The unreflective 'playing' of language games can lead to communication breaking down, but a sensitivity to our own and others' presuppositions, a careful approach to what others say, can lead to understanding. In this way we realise, for example, that the Hopis aren't necessarily wrong about time and space, they just conceive them differently from us. Thus understanding a language game doesn't necessarily involve sharing the beliefs which underpin it even though those beliefs, held by the relevant community, are, in part, constitutive of the language game. We can understand that people don't share those beliefs - an atheist can understand the motives of a believer without sharing his belief . The question of if and how we can choose between ways of looking, modes of conceptualisation, will be looked at later. Finally on the subject of belief it is quite obvious that two people can share a language game but not beliefs in the sense that I can believe that the last train goes at 11-30p.m, and a friend can believe that it goes at 11-15p.m. This is not the sort of belief I've been talking about. The beliefs which underpin language games are beliefs that 'this' way of looking captures, to some extent at least, the nature of the world in which we live - it is this sort of belief, beliefs fundamental to particular forms of life, I have been talking about.

Langauge games, then, are areas of language defined by the connections between concepts and hence by what it makes sense to say. Thus any word that can replace the X in, "This X is heavy," is a physical object word, it makes sense to call a brick or a table heavy but a colour word like 'red' or a sensation word like 'pain' can't replace the X. A sentence like, " This red is heavy," or, "This beauty is heavy," doesn't make sense in English.

The question which now arises is that of how language games are to be distinguished. We might begin by suggesting that they are logically disjoint areas of language, that any sentence which mixes concepts from two language games will not make sense, thus 'brick' and 'heavy' being words from the language game of physical objects can be combined in "This brick is heavy," whilst the lack of sense of "This red is heavy," arises because the word 'red' comes from a different language game - that of colours. But this is too simplistic a view "This brick is red," does make sense, many words play a role in more than one language game, 'brick' obviously does and the 'he' in 'he is big' and 'he is naughty' seems also to be operating first in the physical object language game and secondly in the language game of morality.

A more promising approach is on the level of a subject/predicate type of analysis. It's a fact that, in any language, only certain words refer to 'things', existing entities, whilst other words (like 'red') are only predicated of 'things'. On this sort of approach we would say that distinctions between 'things' are established by the sorts of predicate the relevant referring words can sensibly take. Or, perhaps, we might give a metaphysical argument designed to establish that there are, in fact, certain specific sorts of 'thing' independently of human modes of conceptualisation. Here distinctions between sorts of predicate or thing would be established in terms of logic. The problem with this sort of account lies in the metaphysical distinction between the pre-existent 'things' and the secondary qualities we predicate of them. The fact that such distinctions <u>are</u> built into our languages does not establish their logical necessity. Further the distinction is dependent upon asserting a rift between the world as it really is and the world as we see it. In my discussion of perception I stressed that concepts are centrally involved in directing our attention to significant detail of the world 'given' in perceptual consciousness. In talking about the world we use concepts

and those concepts are built up interpersonally through language, not given in perception. It seems to me that the best we can do in talking about the relationship between reality and our knowledge of it is to say that the world is such that it can be conceptualised in certain ways. To say categorically that the world is precisely as we say it is constitutes a very problematic assertion (as I will show you later).

This is a difficult point to get across. The distinction is between an assertion that 'this' account is absolutely true in the light of eternity and saying that 'this' way of looking leads to expectations that turn out right and hence that we think that we have a conceptual framework which captures some aspects of reality to a reasonable degree. Asserting absolutes (as I will argue more fully later) is problematic, if we claim certainty a sceptic can always point out the possibilities for error. But that our ways of looking do capture the world to some extent is a more easily defensible claim. The assumptions which underpin many of our ways of looking are beliefs which are justified only in terms of the success of the way of looking (the question of what constitutes success will be looked at later) - they are not logically necessary truths, nor can they be shown to be absolute truths about the nature of reality. Any of our current ways of looking can, in the light of experiences which seem subsumable under that way of looking but don't 'turn out' the way that way of looking leads us to expect, be called into question. Thus the way we use language is not merely a question of how things 'really' are (i.e. in the light of eternity) or just a matter of what sort of distinctions it is possible, in terms of some all embracing logic, to make. It is also a question of how we decide to use language and this, as I will argue later is to do not only with the world, but also to do with the ways we come to conceive of the world as we engage with the problems it presents us with.

The idea that there is no logical necessity about any of our current ways of looking, or families of ways of looking, can be demonstrated by an example. Imagine we came across a group of people whose language appeared to render, "The leaf is green," as, "The green is leafy." Now initially we wouldn't jump to any conclusions, after all grammatical differences don't imply conceptual differences on their own. But suppose that these people use all colour words in a very odd way, what if they do talk about the 'weight of the red' and what if we talk to one of their wise men and discover that to them the world is composed of several distinct substances, each substance a colour, and that each colour can take on certain forms, or can combine with other colours to give intermediate colours and take on still more forms? So these people might have a 'physics' based on seven elements (the ROYGBIV of the visible spectrum) backed up by a whole body of metaphysical/theological speculation. In such a case, I suggest, we would have to conclude that these people conceptualised the world in a different way to us.

We could, of course, admit this and go on to say that they are just wrong, that their system only works because they haven't got very far in understanding the world and that it will become unworkable if they try to go on developing it. I believe that there is much in this point of view, but that it is dangerous if it leads us to assert too glibly the general superiority of one way of looking over another. In my next section I will be trying to show that one way of looking can only be judged as better than another given shared problems, that we can only judge this fictitious way of looking I have created as inferior to, say, modern physics, if it is true that it is designed to do the same job as physics.

But in any case the point I am now concerned with is that in using language to talk about the world we

make assumptions about the world which, in the light of experience, can be justified or called into question but which in many cases cannot be conclusively established as absolutely true or false in any clear cut way, either empirically or logically. Even in the sciences the incoherence or inaccuracy of a basic world view, for instance Newtonian physics, cannot easily lead to its abandonment. All ways of looking embody problems (both empirical inaccuracies and logical inconsistencies) but it is quite rational to hold onto a particular view if it does fit the world to a reasonable degree. After all to be without a way of looking is to be without any rational means of planning a course of action, so a way of looking which has problems is better than none at all - the rational course is to hang on until a better world view is generated.

So where does this get us with language games?. It seems clear to me that attempting to impose a logical structure on language is likely to obscure an essential point - that language is a way of making sense of the world in which we find ourselves. There may be logical distinctions in language such as that between intentionality and extensionality, but to focus attention on these features is to take a spectatorial view of language, to abstract it from its role in human life. Having made certain assumptions about the world in which we live we discover that certain sentences don't make sense, adhering to a particular world view imposes certain restrictions on our use of language. But even if we can manage to give a formal account of the distinctions in language which our basic assumptions force us to make all we will have done is to describe one way of using language, we will not have established a priori modes of language. This, it seems reasonable to suppose, is why Wittgenstein gave up the logical approach to language he used in the Tractatus and moved to the looser approach found in Investigations. The distinctions between language games, and the relationships between them, tell us as much

about the prevalent world views of a form of life as about the world. Language games are areas of language where the connections between concepts are relatively dense, but the edges of language games, like the edges of language, are not distinct, we know that it's proper to talk literally about an angry man and improper to talk about an angry electron, but there's confusion as we go through the animal kingdom - 'an angry amoeba' sounds odd whereas 'an angry lion' sounds alright.

This is why we must stop abstracting language from human life, we must approach language from the point of view of what it makes sense for people to say within a form of life and we must accept that the rules operant within a form of life just aren't as well defined as a logician like Davidson would have us believe. In part one of Philosophical Investigations (para.130) Wittgenstein writes:

> "Our clear and simple language games are not preparatory studies for a future regularization of language - as it were a first approximations, ignoring friction and air resistance. The language games are set up as objects of comparison which are meant to throw light on the facts of our language by way not only of similarity, but also of dissimilarities."

As (and if) I understand this passage Wittgenstein took the notion of a language game as descriptive of a community's linguistic practice rather than a way in which we can discover the 'mathematics' of language. Because language games are generated in use and not by deduction from axioms they are open ended. Taking a notion like 'physical object' as the focus of attention in language we discover strong links with other concepts, we discover the physical object language game, a game based on assumptions 'written in' to looking at the world in that way. But any physical object can be regarded as 'beautiful' or 'ugly' and this way of looking is not part of the physical object language game,

it is a different (but not logically distinct in any obvious way) language game - that of aesthetics. Aesthetics doesn't approach the world from the basic assumption that 'things' are physical objects related in a system of mechanistic causality (and this isn't even an adequate account of the presumptions underlying modern physics). Aesthetics approaches the world (in part) from the basic viewpoint that 'things' have a relevance for peoples' affective lives and the language of aesthetics is to do with making sense of 'things' from this perspective.

Thus, I suggest, language games are differentiated by their approaches to the world, by the sort of events and phenomena (in a theoretically neutral sense of these words) which are taken to be central for the ways of looking. Such language games may make more use of certain concepts than others but there is no rigid logical break - mathematicians aren't talking metaphorically when they talk of an elegant proof, they mean it. Further the fact that language games are built up through trying to make sense of certain aspects of the world means that the 'same' language game can evolve, basic concepts and characteristic statements changing through time. Thus the language game of physical objects may embody a particular way of looking, a particular set of concepts at one point in time, but these concepts are not themselves to be regarded as constitutive of the historically continuous language game. This again, is a vague account which will be made clearer in the next section.

My account of language games, then, is that they are areas of language built up on certain basic assumptions, assumptions which give some concepts priority over others and which lead to only certain sorts of sentences making sense. As we acquire language we learn what it is proper to say and what it is wrong to say, and this is to say that as we are initiated into various language games, we inherit a whole set of beliefs about

the nature of things, that some things are people, some are physical objects etc. At any point in time a language game will be identifiable with a particular conceptual framework and, especially in ordinary language, these frameworks will have a certain stability, but this shouldn't blind us to the possibilities of change through time. In the systematic disciplines conceptual change is more explicit, but, as I will argue in the next section, the systematic disciplines still generate language games and the existence of the systematic disciplines can only be explained in terms of communities of interest developing certain areas of ordinary language more systematically (again I will develop this idea later).

Language games are not, as I have argued, logically distinct. They are built up through certain phenomena, being taken together and explained in particular ways, against a background of presupposition which, again as I have said, may be justified or not. But language games can overlap, geography, for instance makes of concepts from different areas, as does history. It is also the case that language games can develop within larger language games, for instancewhen Maths begins to fragment into geometry, statistics, mechanics etc., all of which have dissimilarities as well as similarities. This almost anarchic multiplication of language games arises because language is not a formal system, it is part of human life. People take an interest (for whatever reasons) in some aspect of the world and use language to make sense of what things they're interested in. As they use the concepts which seem appropriate to the object(s) of their interest they discover and forge connections between them (forge because making sense of something involves imaginatively constructing a model using familiar concepts and then seeing if the model has implications which fit the world - more on this later). Thus people generate small scale language games. Some of these language games resemble one another, so

we get areas like physics which is a mass of small language games with a family resemblance which, as physics becomes unified, are slowly brought together, inconsistencies being got rid of (although never completely). But links between physics and other areas still exist because of the nature of language games and the intimate involvement of language with human life in general. In particular links are maintained with ordinary language where the original language games are found, language games which exist because, in coming to deal with the world, to make sense of it, people have found it necessary to use different, and sometimes logically incompatible, ways of looking.

My notion of a language game still hasn't been fully established, and won't be until I've dealt with the relationship between ways of looking, and human interests/ problems which I'll be doing next. But I hope it's clear that language games are distinguished not so much in terms of logic as in terms of what it makes sense to say. What it makes sense to say is dictated by what we're talking about and, as I have argued, what we are talking about depends on how we see things. How we see things depends to quite an extent on the concepts we use and those concepts depend on the way we learn to use language, i.e. on the language games we learn.

This may sound circular, but it isn't, what is the case is that we use language as a way of making sense of the world. Now how we can conceptualise the world depends partly on the world, but also on our own powers of creativity. We can only create a way of looking, a conceptual framework, imaginitively and then see if it works, for instance if the expectations it leads us to have are fulfilled. If a way of looking works then we are justified in claiming that, to some extent, it captures the nature of the world, but we can never (except in the case of successfully specifying an Absolute-something I will discuss more fully later) be sure that it's completely accurate - at any time we

might find something it should account for but doesn't. What it makes sense to say is dictated by our way of looking, but if our way of looking doesn't work then we abandon it (sooner or later). The nature of a language game depends both on our imaginations (i.e. what sort of explanations we come up with) and on the nature of the world - once we have an explanation of some phenomenon we can only decide whether it's a good one by seeing if it fits the phenomenon. Thus a good explanation of a chemical reaction is likely to be nothing like a good explanation of the affective force of a work of art. The different sorts of explanation which fit different sorts of phenomena will overlap, i.e. show family resemblances and will overlap in surprising ways, (e.g. an aesthetically pleasing piece of experimental apparatus in physics). This is only to be expected given that often what is going on is a process in which people try to understand the world not by seeking out the form of the Absolute, but by prying and prodding into different areas in a piecemeal fashion. Ordinary language is a massive conglomerate of different language games, each appropriate for dealing with some aspect of life, but none either very well developed or clearly defined. The systematic disciplines draw on only certain aspects of ordinary language and develop these systematically to give language games/ ways of looking which evolve to increase our understanding of certain aspects of the world.

I hope that this account has done two things: firstly show what a language game can be taken to be and why different language games arise, and secondly to show that the idea of giving a list of language games is inappropriate. We could fragment language into areas as small as we like by stressing any dissimilarities we find, or we could produce a smaller number of areas of language (modes of cognition/forms of knowledge) by giving more weight to similarities. But there would be a great deal of arbritrariness

in such a process. We can, however, identify a number of historically continuous communities concerned with understanding particular aspects of the world and human life and this is something that I'll be discussing later.

For the rest of this section I want to look at how initiation into the specialist language games can be a way of increasing/expanding someone's understanding.

Being initiated into a specialist language game is, besides learning how to use certain specialist words in the correct (within the language game) way, learning to conceptualise the world in certain ways, learning to pick out relevant aspects of experience and to attach the correct significance to them. And here 'relevant' and 'correct' can only be defined within the language game (although they can also be evaluated in terms of their solving the specialist problems of those who form the community which generated the language game). In this sense being initiated into a language game is being initiated into a new mode of understanding, a new way of attaching significance to certain aspects of the world. And this amounts to learning that certain aspects of experience are signs with a particular significance, whatever that significance might be.

Learning to use a new mode of language, if it involves coming to be able to use the concepts embodied in the language game as a means of coming to grips with some aspect of the world and not merely being able to use the words correctly, is a way of expanding understanding. I write in the condition that the conceptual framework should be grasped as more than something which enables the symbols used to be put together correctly as an 'understanding' of this sort would not involve grasping the full significance of the symbols used. If a theory of meaning along Davidson's lines (in purely extensional terms) were fully worked out then quite possibly a

computer could be programmed to use any mode of language correctly in terms of producing meaningful sentences. But the computer would not thereby understand what it was saying, would not grasp the significance of its utterances in terms of indicating appropriate action or attitude.

Language is not a formal entity, it is a means of acting, we learn how to do things with words. The systematic disciplines use words to construct ways of looking at the world which are appropriate for solving certain problems. Anyone who does not appreciate a specialist language game in these terms does not, it seems to me, understand the form of life it is part of. I hope this will become much clearer and better supported through my discussion in the next section.

A further remark in this section must be to the effect that although coming to understand some aspect of the world via initiation into the relevant language game is an important way of achieving understanding, it is not the only way. Even for an initiate of a particular way of looking, one who is committed to a particular discipline, there is no absolute tyranny of language game over mind. A man who is interested in the problems of a discipline and who has a fine grasp of its current conceptual framework can nevertheless come to the conclusion that the established ways of looking are inadequate for the explanation of some phenomena (say). Thus Einstein was capable of breaking away from the conceptual framework of Newton and generating his own way of looking. This is an oversimplistic way of talking about scientific change. But for now all I want to point out is that it is possible to reject certain parts of a way of looking and replace it with something else. This may be something which people set in their ways find difficult, but it is clearly not impossible.

An extension of this point is to say that we should not think of the established systematic disciplines as

the only respectable modes of understanding. There may be areas of human understanding which have not yet been systematised to any degree. Serious scientific research on Psi phenomena is a relatively recent development, and some of the work done in the Soviet Union in the last fifteen years, using advanced electronics to augment the 'medium', could not have been carried out very much earlier (some details are given in 'Psi: psychic discoveries behind the iron curtain' - Ostrander and Schroeder Pub: Abacus). There might also be areas of human understanding which simply aren't responsive to any mode of systematisation which we have used. I am thinking now of things like the 'eye' of a stock-man. Some people have a knack for picking out the right breeding stock (dogs, horses or budgies) and their animals always seem better than those of less talented breeders. Scientists attempt to introduce system into stock breeding and rearing, but there are still areas of choice where some people make the right decisions more often than others. And these 'instincts' are even present in the systematic disciplines themselves. There is no way to systematically describe what happens when a researcher makes a conceptual leap in order to get around a problem. But it is undeniably true that some people manage to do this fruitfully whilst others fail to do it or else find themselves up blind alleys.

My contention is that whilst linguistic accounts of ways of looking are useful in that they can point the way to others, so that coming to understand the linguistic account can be a way of making a conceptual accomodation and hence coming to see the world in a new way, this is only one (although very important) way in which understanding can be reached. Such linguistic accounts can also be useful for the researcher whose research has become confusing for him. But behind the linguistic façade lies the fact of the human mind making conceptual adjustment in order to read the world better. And although language is useful in this process it is not always necessary. At times language gives out, but

people can still cope. And sometimes those people come back and manage to make language say what it seemed incapable of saying - this, it seems to me, is one of the most inspiring features of Wittgenstein's later writings in which he seems always to be reaching beyond language and, having found a hand-hold, hauls language up to a point where he can say, or hint at, what seemed unsayable. Language does not limit mind, it is too mutable, too open to change. If someone has something to express, then, if the modes of symbolic representation available aren't up to the job, he can forge a new mode from the bits of the old.

Finally, in the same vein, the idea that all new modes of symbolic representation must, in principle, be fully explicable in terms of older modes must be rejected, although not completely. A conceptual break like that between Einstein and Newton cannot be fully explained in hierarchical terms, although to an extent Einstein can be looked on as an improvement on Newton. But behind the corrections to Newton's equations of motion lie massive differences in conception of time and space. An equation like $E=Mc^2$ or $M_1=\frac{Mc^2}{c^2-v^2}$, can only be grasped if old notions of energy and matter as different are jettisoned.

My contention, which I will argue for very shortly, is that such discontinuities, which appear as terrible problems for anyone approaching human understanding from the point of view of formal logic, are not really all that difficult to understand. If we take a paradigm of understanding to be that of a group of like minded people facing a problem which they can't see their way round and trying to come up with some solution, then we will get somewhere. Such people have a specialist language game built up through trying to solve past problems. If the conceptual framework, the way of looking, they have used before won't work this time they have a choice either of saying that the problem is not one for them or that their way of looking in unable to deal with

the problem. In the latter case it is open to them, if all fiddling with the accepted conceptual framework fails, to change their way of looking so that old problems are given modified solutions and the new problem solved. All this move requires is that the discipline should not be regarded as closed, but rather as an outgrowth from ordinary language, developed to deal with specific area of problems. If this is done then a discussion about whether 'this' or 'that' way of looking is best can be carried out in ordinary language the criterion of 'best' being, 'that which seems most likely to further the disciplines problem-solving purposes'.

My basic position, so far, is that in using language to talk about the world we adopt a world view, a way of looking that makes it appropriate to say only certain things, to conjoin only certain concepts, although, as my examples ' an angry amoeba' and 'an angry lion', were designed to show, the 'rules' are far from being rigidly defined. Any way of looking is justified only in terms of success in doing some job, in making sense of some aspect of reality (in some cases, e.g. religion, of an assumed-to-exist absolute being) so that it leads us to have expectations that are fulfilled or enables us to plan courses of action that turn out as we intend or serves some other end. This success is what convinces us that any particular way of looking 'captures' reality to at least some extent and makes us happier about the metaphysical presuppositions built into the language game.

I further contend that the specialist language games are developed by taking only certain parts of ordinary language (i.e. by focusing attention on only certain sorts of phenomena) and elaborating the ordinary-language-games to give them better explanatory power (i.e. a better 'fit' to the relevant phenomena) and scope. I believe that in this process a reference to the problems/explanatory purposes of a community of like minded people is necessary.

From an educational point of view what is important is that initiation into already developed specialist language games is a way of increasing understanding. In order to say more about what such initiation must consist in and in order to establish this approach more firmly I must now expand the account I've sketched so far,

Ways of Looking.

Words can have roles in more than one language game as I have shown, and some language games e.g. those of physics and aesthetics are logically distinct in the sense of being mutually irreducible. This means that there are more ways than one of characterising the world, things can be looked at in more than one way. Consider, for example, the case of a botanist and a maker of cricket bats looking at a particular willow tree. Both will see, in an ordinary language sense, the same tree, they will agree that 'this' is a willow tree, perhaps that It's a nice-looking tree etc. But in a more specialist sense the two will see very different trees. The botanist, by virtue of being initiated into the specialist language game/ way of looking of botany will pick out, as significant, features of the tree the bat-maker simply won't notice, and similarly the bat-maker's specialist skills will lead him to pick out significant detail which the botanist will miss. So as soon as people put on their 'specialists hats' they begin to look at the world in ways different to the ways non-specialist use, specialists pick out different detail and attach special significance to that detail. But they nevertheless see the same world as everybody else insofar as both specialist and non-specialist can agree on what they see at the level of ordinary language.

This fact, that we have different ways of looking which give different characterisations of the same thing, raises problems. The first problem is that of making sense of the idea of looking at the same thing in different ways. We can't talk about sameness here in terms of what is said by the different ways of looking as they often characterise the 'thing' they are dealing with in very different ways. We could try saying that sameness depends on there only being a single referring word used by both ways of looking. But that too raises problems as the criteria for the use of that 'word' may

be different within the two ways of looking, so that, from within them, the context-specific meanings of the word may be very different. So it might be argued that the 'single' word is, in fact, best looked at as being two different words, as with the word 'tree' in, 'That is an oak tree,' and 'This is a shoe tree.'

Now from one point of view the idea that the 'same' word has different meanings within different language games can be seen to have some force. For the botanist and cricket bat maker, operating within their specialist language games, the phrase 'willow tree' has different significances. But this doesn't mean that we must say that these differences in meaning amount to the sort of 'different word, same inscription' distinction which my example of the two uses of the word 'tree' suggests. This is because there is no rigid divide between language games. Neither the botanist nor the bat maker first came across 'willow tree' as a technical term within a specialist way of looking, both would typically know the phrase as a referring expression within ordinary language, and both would be capable of picking out instances of willow trees without using specialist concepts. It is, I suggest, at the level of ordinary language that we can find agreement between initiates of different specialist ways of looking and it is this agreement which makes it possible for us to talk coherently about different specialist ways of looking leading to different accounts of the same phenomena.

It is important to grasp that if language games were all logically disjoint then it would make no sense to talk of the same word having a role in different language games or of different ways of looking giving different characterisations of the same thing. We can only talk like that because referring words are, basically, nothing more than linguistic labels for classes of things. It is in the process of trying to make sense of those 'things'

that words come to have a role in different language games and those language games are inter-related, in part, by the fact that the basic referring words seem to fit equally well into different modes of language - a box can be wooden, large, heavy etc., which means that 'box' has a role in the physical object language game, and the same box can be exquisitely carved, beautiful, etc., which shows that 'box' can fit into the language game of aesthetics. The obvious point here is that there are 'things' called boxes in the world and we can come to understand them from different point of view, as physical objects or aesthetic objects for instance. But to say this only makes sense if language games are not logically disjoint, if referring words are, in essence, seen as being theoretically neutral terms which receive their theoretical 'charge' through being used (and usable) in various language games. Only by taking this approach can we explain how we can choose to 'lift' a referring word from one language game to another, how we can decide to look at objects of experience in different ways, for instance, decide to look at a musical instrument solely in terms of physics in the hope that a characterisation in those terms might help us to find out what precisely makes what musicians, 'looking' aethetically, judge to be a good violin.

This line of thought must lead away from the notion that language is to be seen as a collection of logically disjoint parts, and towards the view that language must be regarded as a way in which we collectively attempt to make sense of the world in which we find ourselves, logical distinctions, where they occur, being constituted as we discover what it does and does not make sense to say of various aspects of the world. It must also be remembered that the question of what it makes sense to say is not only to do with the nature of the world, there is also the matter of how we use language. The Hopis have different concepts of time and space to us and therefore see things differently, there are also primitive tribes who don't divorce dreams from reality in the way we do and so have

a different approach to life and the world.

One of the central problems to be looked at in this section is that of whether the element of choice in language use makes it impossible for us to justify a claim that we have knowledge of the world other than in the sense that we know it because we constructed it through agreement in the use of language. This latter is an extreme relativist position of a sort that some sociologists of knowledge (Berger and Luckman in 'The Social Construction of Reality', for example) and some philosophers of science (notably Feyerabend in 'Against Method') have moved towards. Opposed to a relativist position is that of the absolutist. Absolutism is the view that there is an external world which we can know 'sub specie aeternitatis'. On this view we can always discover whether what we say is absolutely true of an independent reality - the pursuit of knowledge is seen as a matter of discovering how things really are, independently of human foibles. Absolutists include Popper and his followers, the logical positivists and a whole host of others who reject the relativist thesis. I should say that this characterisation of Absolutism is too brief, but this will be corrected later. The important element in absolutism is the belief that knowledge is of a reality independent of human conceptual habits. I would include Popper's account of science in a list of absolutist philosophy as a weak version of absolutism as he regards scientific statements as not being verifiable. Popper's position is essentially that whilst our verification procedures can never give us certainty that 'this' is how things really are in the universe they can give us certainty that 'this' is <u>not</u> how things are. Thus although we can never be sure that our ways of characterising things really do fit the universe we can, by finding faults in our way of looking, improve them and therefore get better and better approximations to the way things really are, even though we're never sure how close we are to really understanding how things are.

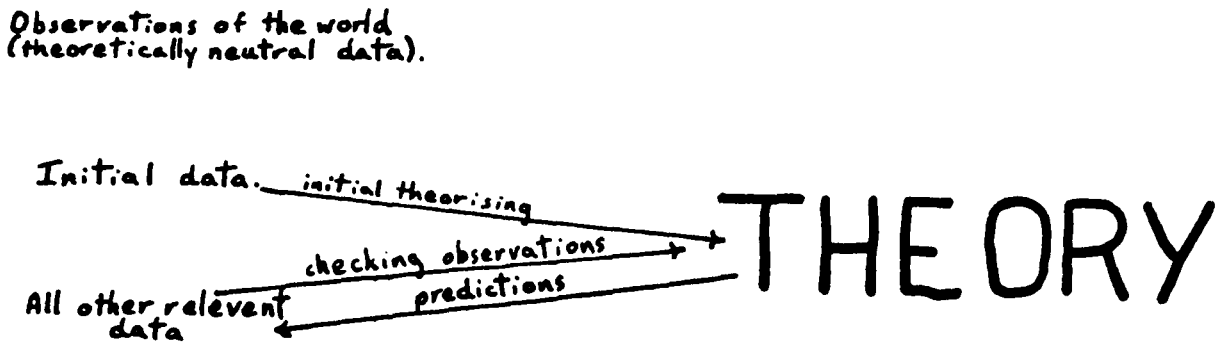
The absolutist, then, is committed to the view that objectivity consists not only in according with culturally determined modes of conceiving, but also in striving towards a complete account of an independent reality. An extreme relativist, on the other hand, sees knowledge as being tied to language and objectivity as being a matter of following rules of procedure, and therefore sees both knowledge and objectivity as normative concepts specific to particular cultures. For the relativist what counts as objective truth is a cultural variable. I hope to steer a safe course between these extremes. I will try to show that whilst we do arrive at an understanding of an independent world, whilst we do discover what sort of account fits the world by checking theory against reality, there is still an element choice about what sort of account we're looking for. I want to keep the absolutist's view that knowledge is of an independent reality, but I also want to insist that the ways of looking which we develop aren't just ' ways of looking that fit the world, they 'fit' the world as we come to conceive it in engagement with the problems it presents us with - thus our conception of how things are in the world, our understanding of reality, is always arrived at from an essentially human perspective.

What I want to adopt is a middle line, accepting that relativism captures many important ideas, but not cutting off language from an independent reality in the way extreme relativists tend to do.

In my account of perception I concluded that we do, in perceptual consciousness, have access to a public world independent of us. But I also stressed the role of concepts in perception, that seeing is seeing-as, that what we see things as depends upon the concepts we possess, and that most of the concepts we possess are acquired through language. I also suggested that the question of whether a conceptual framework fits the world is only answerable on the basis of whether

expectations which a particular way of looking leads us to have are fulfilled. In order to establish the view I want, a view which steers a safe course between the extremes of both absolutism and relativism, I must now attempt to expand these sketches into something more complete. As I do this the need for reference to the problem-solving purposes of people will, I hope, become obvious.

I will begin by looking at the sciences. This is the easiest starting point as it produces a relatively straightforward account, one which will be expanded when I look at more difficult areas, like aesthetics and religion. In recent years the objectivity of the sciences has come under attack as more and more people have realised that a theoretically neutral observation language is an impossibility. Any scientific theory is a general account designed to fit the available data and which should, if successful, explain and predict all other relevant data (including data which will be obtainable at any future time). A simplistic view of this process is represented as follows:



On this sort of view the theory is generated on the basis of the initial data and will survive for as long as all the other relevant data fits it.

As soon as the data isn't what the theory predicts then the theory is seen as problematic and must be either modified or else abandoned.

This account is just too simplistic. Modern physical

scientists, working in a tradition formulated initially by Galileo and Newton, still concern themselves with collecting quantitative data of a sort that can be formally represented in the language of mathematics. This preocupation is what has led to much of the success of physics, but it also is the source of a tendency to see physics as not being about understanding the nature of reality. A quote from Newton will show this tendency:

> "To tell us that every species of things is endowed with an occult specific quality by which it acts and produces manifest effects, is to tell us nothing: But to derive two or three general principles of motion from phenomena, and afterwards to tell us how the properties and actions of all corporeal things follow from these manifest principles, would be a very great step in philosophy though the causes of principles were not yet discovered: and therefore I scruple not to propose the principles of motion above mentioned, they being of very general extent, and leave their causes to be found out."
> (from Newton's principles, re-printed on P.230 of Morris Klines' 'Mathematics in Western Culture'.)

Newton, then, didn't know why things move as they do but he did come up with a mathematical representation which fits (with a fair degree of accuracy) the way things do move - similarly Newton freely admitted that he didn't know what gravity was, but his mathematical law of gravitation wasn't improved on for over 200 years. The reasons for Newton's approach to physics being adopted are very complex, but one reason was certainly the fact that the older qualitative 'physics' with its hotch-potch of theological doctrine and metaphysical speculation was (i) marking time, and (ii) having a lot of trouble handling new data, such as that gathered by Galileo using a telescope to survey the night-sky.

But what I really want to draw out here is that questions about what phenomena a discipline is interested in, what sort of account of those phenomena will be

regarded as adequate and what sort of data will be collected is a matter of choice and is not totally a matter of the nature of the world. Before Newton questions about the world were answered predominantly in terms of metaphysical essences. Newton explicitly rejects that approach in the above quote and offers an alternative way of characterising the nature of the world. Put crudely Newton's way of accounting for the nature of reality was to say something like, " The nature of the world is such that when 'this' happens, then 'that' as a matter of contingent fact, also happens. I am not at all sure about the (causal) mechanisms linking 'this' and 'that' but the mathematical relationship is as follows....." My point is that although any particular characterisation of a phenomenon will depend upon the nature of what is observed to some extent, that characterisation will also depend on how the person making the description sees what he is doing. It will depend upon what he sees as being an adequate description. Similarly the question of what data will be regarded as relevant, which particular measurements will be made, depends very much on decisions made within discipline. What sort of theory will be accepted as an adequate account of some class of phenomena is as much to do with the presuppositions built into a way of looking as with what is actually observed. In later discussion I will be discussing the status of these presuppositions and arguing that they do not constitute reasons for saying, for example, that science may not really be concerned with understanding the nature of reality.

The idea that observation language has built in presuppositions and is not theoretically neutral is important. Not only are scientists selective when they collect data, but their selectivity is directed by prior assumptions they make about the nature of the phenomena in which they are interested. Central to any attempt to describe the motions of heavenly bodies

in mathematical terms is a presupposition that such motions are pre-determined, that planets and stars are not free agents, but move through the heavens in accordance with fixed principles which can be stated as mathematical laws. This belief is justified by the fact that astronomical data go back a long time and have always revealed regularities which astronomers have tried to represent geometrically for well over two thousand years. The presupposition that there is a large class of natural events in respect of which concepts like 'consciousness' and 'free will' have no application is basic to physics-based science. It is not certain knowledge but it is a justified assumption insofar as it leads to the formulation of theories which successfully predict events. Insofar as theories based on mechanistic presuppositions lead to correct predictions we gain confidence that the predictable events are the result of mechanistic causality - in other words a basic assumption about the world is taken to amount to knowledge when the available evidence suggests that it's right. Of course there are problems here. We are happy about the use of a mechanistic model (and modern physics remains mechanistic even though nowadays the model is probability based rather than strictly determinist) to describe planetary and stellar motion, and this is largely because purely extensional theories do predict the positions of stars and planets accurately. But we are also quite happy about talking mechanistically about paper blowing in the wind even though we can't in fact predict what will happen. We accept that the problem of predicting the motions of a piece of paper in the wind is the same sort of problem as that of predicting planetary motion but that the forces involved are so transitory that, in fact, we cannot collect the necessary data. Thus we say, with some justification, that in principle we could predict the motion of paper in the wind, but that, as a matter of contingent fact, we can't manage it. Paper in the wind is a trivial example, but meteorology isn't. Meteorology is based upon the assumption that an account of the mechanisms

(i.e. purely extensional) by which our weather is produced is a possibility and that once such an account is formulated we will be able to collect the relevant data and predict our weather accurately. This is an interesting example in that meteorology is still in its formative stages - it just isn't very accurate yet. In such a case the disciplines' basic presuppositions, although they seem reasonable, have not yet been fully justified.

In general all disciplines can be seen to favour particular ways of characterising the phenomena in which they're interested and hence to embody, within their ways of looking (at a particular point in time) certain presuppositions about the nature of these phenomena. The starting point for most systematic disciplines is, I suggest, an ordinary language account of the relevant phenomena, although theory must progress and in time the source of new characterisations will be the inspiration/ intelligent guesses/hunches of specialist researchers. But whatever the source of a discipline's initial working hypotheses it remains the case that it is the in-built presuppositions about relevant phenomena which guide the formulation of theory and the collection of data. It only makes sense to give a geometrical account of motions which are regular and which are plausibly explicable in extensional terms. Where agency is involved we are generally concerned more with someone's intentions than with accurately mapping bodily movements, except, of course, in special cases like time and motion studies where we are explicitly interested in the physical movements involved in carrying out a sequence of action. The inappropriateness of geometrical descriptions of physical motion in most cases involving agency arises, of course, from the impossibility of specifying actions without reference to intention - identity of motion does not imply identity of action and hence a purely extensional account of someone's motions isn't very useful in predicting future actions

whereas understanding what someone is doing in terms of what action is being performed and why often turns out to be useful in predicting future actions. It must be noted that whereas causal chains of events do seem to occur in particular sequences with a high degree of probability that (say) event B will follow event A, people just aren't like that. In some circumstances people's sequences of action can be predicted, experiments in impersonal control techniques have demonstrated this clearly, as have many other experiments in social psychology. But the degree of predictability in such cases is far less than in cases where the assumption of mechanistic causality seems more plausible. People can reflect on what they should do next (even if they don't) and it is this ability to reflect and decide which can lead us to opt out of a chain of action or else alter its course.

Both psychology and sociology this century have at times attempted to achieve scientific status by emulating physics and neither discipline has got very far. It seems to me that the problem is primarily that an attempt to find general principles for people which parallel those for inanimate objects is misguided. Physics deals with the world in a way that does not admit, because it is not interested in, the notion of a conscious agent. If psychology and sociology try to work too much on the same lines as physics they run the risk of importing, tacitly at least, certain of the mechanistic presuppositions of that discipline, I suggest, then, that some of the failures of the human 'sciences' this century have occurred primarily because techniques have been imported from physics which are based upon mechanistic presuppositions and hence are inappropriate for the study of conscious agents.

My suggestion is that the sort of data which the presuppositions basic to physics make relevant for

that discipline is simply irrelevant, in many cases, to the endeavour of attempting to understanding a conscious agent's reasons for acting in particular ways. I hope this brief discussion has made clear what I mean when I say that a discipline's basic presuppositions, assumptions built into the discipline's observation language, dictate what sort of data counts as relevant and hence is collected.

These assumptions built into the observation language also effect what we see, not just in the sense of directing our attention to certain things rather than others, but also in the sense of leading us to interpret what we see differently. For instance a confirmed mechanist sees only events. Even if he uses action language to describe what he sees he remains convinced that what he sees will ultimately be fully explained by a set of purely extensional descriptions. So the initial characterisation imposes itself on the endeavour in two related ways. By embodying presuppositions about the phenomena being observed it allows those phenomena to be described in some ways but not in others and, further, the sorts of theoretical account which those presuppositions allow dictate what sort of data should be collected, what data is relevant to the accuracy of the theory. The important point to grasp is that those initial presuppositions are vital. Without an initial hypothesis about the nature of 'this' and 'that' no systematic enquiry could begin and hence those presuppositions could never be modified and improved on - we could not increase our understanding. Presuppositions can be modified and justified in the light of experience and can be shown to lead towards ways of looking which fit the world.

So the idea that scientists proceed by collecting neutral data about how things are in particular times and places and then constructing a general theory on that basis is just too simplistic. Scientists must

decide what they are interested in, and what constitutes an adequate explanation of the relevant phenomena. And data can, ultimately, only be relevant to particular hypotheses, thus the presuppositions built into the notion of an adequate explanation will also play a part in defining what constitutes relevant data. But this is not to say that science tells us nothing about the world. Rather I am concerned with rejecting a view of science as being based on a model of finding the facts and then theorising. I want to insist that there is a greater element of creative imagination in what actually takes place, that a way of looking has to be generated imaginatively from casual observation before an explicit theory which can be checked rigorously against the data can be formulated. Checking a way of looking by seeing if its theoretical implications fit the facts is a way of seeing if it fits the world, but it is not a way of showing it to be a complete account. This follows from Popper's insight that evidence which is consistent with a theory never formally proves that the theory is correct whereas evidence against a theory formally constitutes a proof of the theory's falsity. Such a fact implies that the presuppositions basic to a particular approach to the world can never be shown conclusively to be true of the world, all we can do is justify them by checking to see if any relevant data turns up which constitutes a counter example to their claim that things are 'like this'.

The creation of a hypothesis, then, involves imagination and the hypothesis itself, formally speaking, can never be proved. Thus there remains a degree of freedom in our choice of presuppositions which might prove problematic to absolutism. But, on the other hand, all this freedom means is that we have to give up absolute certainty and content ourselves with the statistical judgement that the relevant data agrees with a hypothesis and that therefore our hypothesis and our way of looking (presuppositions and all) seem to fit the world to quite a degree. This freedom,

however, does open up the possibility of the world being describable, with a fair degree of justification, in a number of different ways. Instead of interpreting 'The world is like this' in a strictly absolutist way we might say that the nature of the world is such that we can conceive 'these' aspects of it in 'these' ways. My point is that the acceptability of a theory is to do with more than the question of whether it fits the world, it is also to do with the interests and problems which people happen to have.

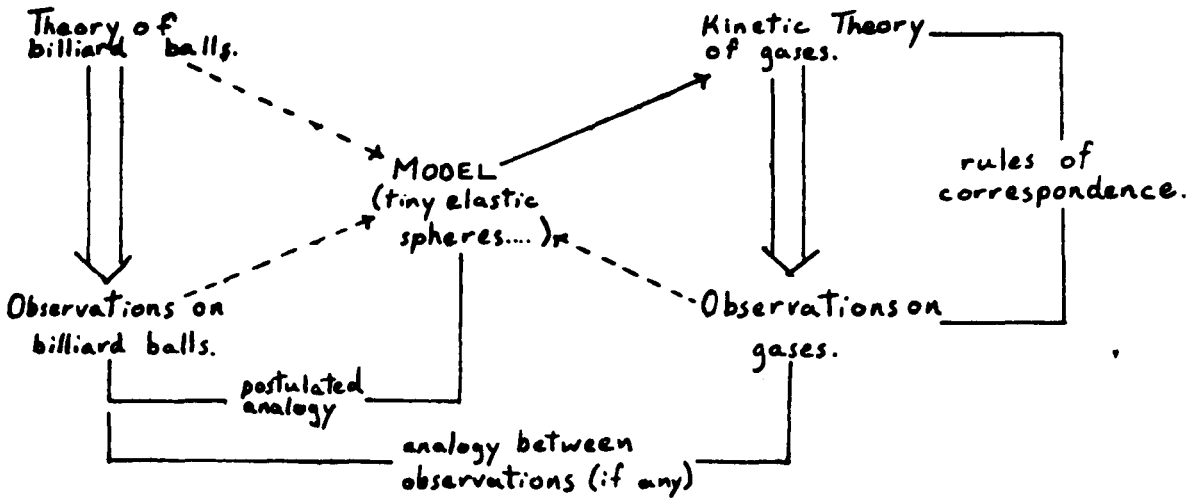
Describing phenomena in purely extensional terms and attempting to describe physical relationships in mathematical terms is something that physicists after Newton decided to do. The decision was not one imposed by the nature of reality - the nature of reality didn't change in the 17th century, only the nature of physics. One reason for physics changing direction with Newton was certainly the fact that Newton was successful in all sorts of ways whereas the older approach, in terms of metaphysical 'essences', was stagnating. And here is where specific problems appear - we can't be successful in an activity unless we begin with something we want to achieve, 'success' implies having achieved a target. So we can see Newton as saying (as the earlier quote suggests) that the sorts of things that earlier workers were trying to do constituted poor solutions to the problems they were confronting in that success just wasn't forthcoming. Newton proposed a change of approach for physics - that of attempting to discover mathematical regularities in events, of discovering mathematical laws. This was a good move for physics, according to Newton, because it gave success, as his laws of motion and gravitation demonstrated. It is a matter of history that the adoption of Newton's recommendations led to the rapid growth of physics. It is interesting to note though that the difficulty of marrying mathematical law with some account of the nature of things (e.g. atomic structure),

a difficulty which Newton fully grasped, still remains, particularly in the realm of sub-atomic physics where direct observation just isn't possible.

In his book, 'Myths, Models and Paradigms, 'Ian G. Barbour talks about models as providing the link between theory and the world, he writes (P. 30):

> "A theoretical model, then, is an imagined mechanism or process, postulated by analogy with familiar mechanisms or processes and used to construct a theory to correlate a set of observations."

Barbour offers this flow-chart designed to show the generation of the 'billiard-ball.' model of gasses. This theory thinks of the pressure of a gas as consisting of the impact of very small elastic spheres (the molecules) on a container.



The double arrows in this flow chart are described by Barbour as, "... the formal deduction of experimental laws from theory together with rules of correspondence." The broken arrows are 'lines of creativity' the model being generated imaginitively through analogy with a familiar situation (in this case the motion of billiard balls). The single unbroken arrow is the link between model and theory - the model suggests a theory (in mathematical form in this case) which can be checked against actual

observations on gasses (the theory's mathematical form is what allows the theory to be checked precisely against quantitative data).

Barbour's use of the notion of a model is essentially the same as my use of the notion of presuppositions basic to a particular approach to explaining some phenomenon except that his account is rather more subtle than mine so far which is why I want to make use of it. To him a model, as with the 'tiny elastic spheres' model in the flow chart can be as limited as we like. Its job is to give us an idea of what we are dealing with so that we can see what sort of theory might work. But the model has another, equally important, job - that of linking theory with the world. Initially a model is taken as neither true nor false, it is simply an idea to be tried out, There is no easy way to explain where models come from - they are imaginative creations, hunches to be followed up, models are not generated by any algorithm. The model, through analogies (however vague) with other, familiar, situations suggests a theory and once we have a theory we can check it against relevant data. As a theory is shown to fit the world we become more and more confident that the model which underpins the theory captures the nature of reality to some degree, although it is quite obvious that the relationship between model and world is not one that gives anything like absolute certainty. It is also the case that adjustments to a theory can lead to a model's changing - for instance the 'tiny elastic spheres' presupposed by the Kinesthetic theory of gases are nowadays thought of as having a mutual attraction.

Barbour also distinguishes between ordinary models and paradigms. He uses 'paradigm' to denote a research tradition, for instance the Newtonian paradigm in physics. A paradigm also involves a model, but one of great generality and suggestiveness, so Newton's vision of the universe as a vast system of physical objects moving in accordance with fixed laws was a model which grasped the imaginations of scientists and directed the

development of physics for more than two centuries. Paradigms are important as they provide a basic approach to the world which gives concensus within the community based on that paradigm. Paradigms, then, are like the basic presuppositions constitutive of a language game at a particular point in time. But such presuppositions can change through time, and paradigms come and go in the sciences.

Paradigm changes in the sciences are not an easy matter and there are always some oddities involved - for instance the break from a geocentric to a heliocentric view of the universe was helped by the inability of Ptolomeic theories to explain the facts about the movements of the planets. Tycho Brahe did produce a system which had the planets going round the sun and the sun going round the earth which fitted the available data as well as Galileo's heliocentric system (and neither was perfect). but Galileo won the day. Of course later observations supported Galileo more and more, but this later support doesn't explain why Galileo won through. On the other hand, though, it could be argued that the geocentric model had led to so many problems and had been patched up to such a degree that astronomers might reasonably have decided that a totally new approach, which predicted movements with reasonable accuracy even in a relatively undeveloped state, might prove more fruitful in the long run than Tycho Brahe's imaginative patching up of the old system. This, however, is speculative, the social climate of the times, particularly the grip of the church on intellectual life which more and more people were coming to see as undesirable, might have made the adoption of Galileo's system a symbolic defiance of the church. And, of course, Feyerabend, in 'Against Method', concludes that Galileo cheated, that at the time of his victory over geocentric models there was no justification for accepting his heliocentric theory. I don't know the answer - and this, after all, is not an essay in the history of ideas.

It seems fairly clear from history, though, that although evidence counts for or against a paradigm (and I will continue to use the word in Barbour's sense) there is no clear cut way in which a particular piece of evidence can finally deal a death blow to an established paradigm. It just isn't true that Galileo solved all the Ptolomeic system's problems in one go, he kept circular orbits (for metaphysical/theological reasons inherited from the Greeks) and therefore still wasn't totally accurate, and on correspondence with the facts Galileo wasn't significantly more accurate than Tycho Brahe. Similarly Newton's mathematicisation of physics wasn't totally free of problems. His predictions of planetary motions still weren't quite right, his laws of motion didn't take air resistance into account and the calculus, developed at the same time by Newton, Liebnitz and Fermat (following after many others), which underpinned such notions as instantaneous speed (speed at a particular point of time - on essential notion for the laws of motion) had no basis in logic until 200 years later when (in 1821) Cauchy published 'Cours d' Analyse'. This lack of a rigorous basis led Voltaire to describe calculus as, "the art of numbering and measuring exactly a Thing whose Existence cannot be conceived."

What appears to be the case is that a paradigm is adhered to and patched up for quite some time whilst a more attractive alternative is awaited. At the present time physics is getting towards this state. Einstein's laws can't deal with events inside a black hole (a collapsed star which has a gravitated 'pull' so strong that even light can't escape from it). On a recent television programme 'Einstein's Universe', celebrating the centenary of his birth, physicists were to be heard talking of 'twisters', entities more fundamental than matter and space, which are being worked on in an attempt to render black holes more comprehensible. Thus just as Newton's notions of time

and space as absolutes were replaced by Einstein's notions of time and space being warpable by mass, so, it appears, we can expect at some future time, the emergence of a new paradigm in physics which will embody new conceptions of time, space and matter.

A paradigm, then, is basically a way of looking at the world, a way of conceiving reality which leads to the generation of theories. For as long as those theories do fit the world (i.e. accord with the relevant data) we remain confident that our basic model is a reasonable approximation of the way things are in the world. When problems appear we make adjustments to our basic model, but if, at some point, the problems start piling up and the theories begin to look too patchy, we begin to wonder whether our basic model, our basic way of looking/conceiving, isn't at fault. It is at this point that a new paradigm can gain acceptance. It is important to realise that science always has anomalies, odd little phenomena that don't fit within the paradigm, and usually these are put to one side so long as the paradigm is leading to success in other fields. Only when the paradigm has been all but 'wrung dry', when the anomalies become too frequent and the rate of progress drops off, do we start looking for alternatives. There is nothing necessarily irrational in this, if we want to increase our understanding we've got to follow up likely ideas - if we wait for absolute certainty we may never understand anything. And anyway following up a paradigm to the point at which it breaks down is the only sure way to find out what its shortcomings are, and this is important information. New paradigms are generated within the scientific community - only someone who knows the mistakes of the past can be sure of avoiding them, so the generation of new paradigms is done 'on the backs' of previous paradigms, a discipline progresses by avoiding earlier mistakes.

The links between a scientific community using a

particular paradigm and a language game based on particular presuppositions should by now be obvious, and hence it should be clear that it is proper to talk about specialist disciplines using specialist language games, modes of language based on particular paradigms. We now come up against a problem which I left hanging in the previous section. I said then that a language game would, at any particular point in time, be based on certain presuppositions about the nature of the phenomena it is used to talk about. But I also asserted that these basic presuppositions can change through time without requiring us to say that we had a different language game before the change to that which we have after the change. I think that I am correct in making this assertion. Language games are not logically distinct, there is no easy formulation for deciding whether two language games are the same. We can decide to group language games together in terms of the presuppositions underlyimg them, but this could involve making arbitrary decisions about which language games to put together and which to keep apart, and dividing up areas of language (and hence knowledge) in too quick a way would seem likely to obscure the complex relationship between them. I will, in fact, be doing something of this sort in later sections, but will be making the classifications in terms of problem-domains in an effort to avoid representing different areas as being totally disjoint in terms of concepts and procedures.

If we look at various language games at a point in time we can make distinctions, for instance between the language games of physical objects and aesthetics. But if we start looking for sharp logical boundaries between areas of thought we can't find any. A work of art is a physical object and, when producing a work of art, an artist must, to some extent, regard his problem as one of manipulating materials which have certain physical properties. Similarly a language game like that of physics can still embody notions

of elegance which are aesthetic. Attempts to package various language games/ways of looking into distinct areas always involve a degree of arbitrariness as formal logical distinctions rarely serve to distinguish between naturally occuring areas of language. There may be ways of arriving at agreement on such matters, arbitrary decisions sometimes have to be made and arbitrary distinctions observed - in morals, for instance, it can be argued that the question of what rules should be accorded with is a matter for decision within a community rather than an imperative with independent validity. But although I will re-introduce the idea of a classification of ways of looking in later discussion For now I want to draw attention to the links between ways of looking.

In educational theory distinctions between ways of looking have too often (Hirst, Phenix and White are examples) been seen as distinctions between areas of knowledge which just are logically disjoint. The idea that there are logically distinct areas of cognition persists even in the face of counter evidence and it is this idea I wish to attack. That some useful distinctions can be made between ways of looking is something I can accept so long as such a classification is argued for from the point of view of different problems requiring different solutions or on the basis of empirical evidence about generalisation of learning or something of that sort. But I cannot accept that there just are different sorts of knowledge, different forms of cognition, as a matter of logic. I wish to represent the distinctions between language games, as matters of historical fact and similarly for the organisation of subjects in educational institutions. I wish to suggest that questions about such organisation cannot be answered merely by reference to the logical nature of language.

If we look at language games through time we begin to realise why the arbitrariness of 'logical'

classifications of language/cognition/knowledge is dangerously misleading. Language games, even specialist language games, change through time, new language games 'split-off' from older ones, as both psychology and sociology have grown out of philosophy, and often vestigial links remain even after radical changes. We no longer believe (in the 'developed' world) that natural events are 'willed' by spirits, but we still, for example, say things like, "Come on, don't rain now," when a cricket match we're watching seems in danger of being stopped by rain. What once was taken seriously as an evocation of a 'god' or spirit is now taken not-so-seriously, but the links are there, our language games retain vestiges of earlier ways of explaining natural events.

With the specialist disciplines the situation is just as complex. To announce that physics is an empirical science and mathematics a formal discipline is simply to ignore fact. Methodologically physics is as much a formal discipline as it is empirical - basic laws are based on observation, but once they are established physics often works by deduction, taking the laws as axiomatic within a deduction system. Similarly Mathematics works deductively from axioms, but the question of which axioms to work from often has an answer that, in part at least, is empirically based. Euclid's axiom to the effect that the shortest distance between two points is a straight line was adopted because it was an empirical truth which no-one disagreed with. Russell, in his 'Introduction to the Philosophy of Mathematics', talks in terms of working backwards from the fact of our using numbers in real life to axioms which can give numbers as we know them a firm logical basis. Newton invented calculus (along with Liebnitz) as part of his work on the laws of motion, the analytic basis of calculus was developed by Cauchy 2oo years later. The importance of giving calculus a firm logical basis came mainly from the fact that astronomers found calculus an extremely useful tool - it's always embarrassing to

have maths that work and not to know why. Even more heterogeneous is the story of projective geometry, a branch of maths which grew out of work on perspective by such men as DaVinci and Dürer and was closely related to the problems of map making and architecture - here we have a strong relationship between cartography, painting, architecture and mathematics. A final example of the way in which areas interact is Probability theory, a very important element of statistics, which owes its generation to the fact that gamblers wanted to work out the odds for and against winning more accurately. Jerome Cardin, renaissance mathematician and general rogue, wrote a book called ' Liber De Ludo Aleae' in which he studied the problems of throwing sevens with two dice and of picking aces out of a pack of cards. About a century later another gambler, the Chevalier de Méré, who wasn't a mathematiciam, Asked Blaise Pascal to solve his probability problems. Pascal,in collaboration with Fermat, worked out the basis of probability theory.

It seems to me that the importance of the ways in which different aspects of life interact and direct the ways of looking we use must make it more desirable to talk about language games being historically continuous and evolving. Attempts to parcel up knowledge or modes of conceptualisation into distinct areas are dangercus in that they don't reflect the inter-relations between language games and don't reflect the varied motivations for certain ways of looking being formulated.

What I am also saying is that we shouldn't let the fact that mathematicians (for instance) set down their work in the form of elegant deductions from apparently . unquestionable axioms fool us into thinking that mathematicians proceed by first seeking out unquestionable axioms and then seeing where deduction takes them. This just isn't the case. Mathematicians, like the rest of humanity, do things for a wide variety of reasons; out of interest in Maths for its own sake, out of interest in problems arising elsewhere (trigonometry

was generated from problems with astronomy and navigation, calculus was needed to back up the laws of motion), and also out of sheer self interest (Cardin's interest in probability was directly concerned with wanting to win- he noted that the probability of drawing an ace was vastly increased if the ace was soaped beforehand). The growth of Mathematics is inextricably connected with other disciplines and with more general problems of human life.

It seems to me that dividing up language games according to their underlying assumptions at a point in time has two problems. The first is that we are likely to find that our language games constitute not distinct areas, but a series of cases which are linked by family resemblance (in Wittgenstein's sense). Thus dividing up different areas of language would involve deciding when a conceptual similarity between areas is great enough to call them the same language games and when not - and this is to say that any division would be challengable as being a matter of hopelessly arbitrary stipulation. The second problem is that putting language games (and hence knowledge/ forms of cognition/ modes of understanding) into separate packages is dangerous in that it invites us to ignore the very complex inter-relationships between different ways of looking and between any specialist way of looking and human life in a more general sense. In particular the identification of a research tradition with a neat package of information just <u>is</u> inappropriate. No matter how many text books we memorise we do not therefore understand physics or maths or aesthetics, we don't thereby grasp that 'this' information was generated in the engagement of people with the world, or how, or why.

There is, however, a very real problem involved in saying that the presuppositions basic to language games can change over time. Such a statement involves saying

that the same language game can be based on different assumptions about the world at different times. The problem is that of explaining what my criteria of sameness are, if I can't do this then the idea of the 'same' language game changing basic presuppositions or concepts (or whatever) is incoherent.

My way round this problem is to look at language games as linguistic traditions. The idea that language games are, at a point in time, based on a particular set of presuppositions about the phenomena with which they deal is an abstraction from the fact that, at a point in time, there exist communities of language users who have corporate sets of beliefs about particular aspects of the world, beliefs which fragment their language into language games which are constituted within the community.

In terms of ordinary language the historical continuity of the community is a matter of parents transmitting language and beliefs to their children. The ways of speaking, and hence ways of looking, of such a historically continuous community may change through time, but insofar as the changes are gradual and the evolution of beliefs about different aspects of the world is traceable through history, then we can coherently talk about the relevant language games evolving, i.e. being the same language games but having different presuppositional bases. So the notion of 'sameness' with respect to language games comes down to a notion of continuity within a historically recognisable tradition. The question of what makes a tradition recognisable must immediately occur.

There is also a related problem here, which is that of how we decide that a change is such that we really do have a new language game and not merely a modification of an older one. The transition from alchemy to chemistry is one example which seems to be a change between language games as is that from astrology to astronomy. The move

from Newtonian to Einsteinian physics seems, on the other hand, to be more like a change within a single tradition. The distinction between cases like those, it seems to me, must be made in historical terms of whether there really is an observable discontinuity of a sort which suggests that, for instance, astronomy should be seen as something very different from astrology. It isn't easy to point to such a discontinuity in the case of the astronomy/astrology split. Kepler, for instance, who is an important figure in the history of astronomy as the one who hit on the idea of elliptical orbits for the planets, once held the post of professor of Mathematics and Morals at the University of Graz, a post that required him to master the art of astrology. It is also the case that Kepler's third law of planetory motion (the square of the time of revolution of a planet is proportional to the cube of its average distance from the sun) first appeared in 1619 in a work called 'The Harmony of the World' in which he expounded a new version of the music of the spheres. The sun, according to Kepler, had a soul and enjoyed the harmonies resulting from the different velocities of the six planets. It seems clear that the astronomy for which Kepler is remembered today was, for him, only a part of a much wider endeavour which owed something to astrology and was closely related to the Greek view of geometry as a way of discovering truth, the harmony underlying the sensible universe. This sort of mixing of astronomy with ideas coming from theology and astrology parallels the confusion found in pre-Newtonian 'physics', but whereas we might plausibly represent Newton's 'Principia' as the discontinuity which gave physics its autonomy as a way of looking distinct from metaphysical philosophy and theology there seems to be no clear 'break-off point' in the case of astronomy and astrology. Rather there seems to have been a growing apart of the two areas. Astronomers began to be interested only in the problems of finding a correct geometrical description of the motion of the heavenly bodies, and later in constructing physics-based models of the

universe leaving out the anthropormorphism found in the astrologically - influenced discussions of earlier astronomer/astrologers who talked about planets being incorruptable bodies and ascribed agency to them.

I suggest that identification of astronomy as a tradition of enquiry ditinct from astrology can be done only given the historical fact that over the period from the seventeenth century to the present day the two communities of astrologers and astronomers, have grown apart. The community of astronomers has progressively weakened its links with astrology and theology and strengthened its links with post-Newtonian physics. Astronomy undeniably grew out of astrology but grew apart and adopted a very different conception of the problems to be solved. It must be seen as a new tradition rather than a re-vamp of astrology not just because there was a change of way of looking, and in the conception of problems but because it moved away from astrology, leaving that tradition intact (even if astrology now seems to be little more than a form of amusement not to be taken too seriously).

The change from Newtonian to Einsteinian physics remains a change within a tradition mainly because Einstein's purposes in forwarding his theories were tied up with trying to solve problems that were shared with Newton. Whereas astronomers simply gave up on the problems of astrology and became concerned with problems which, whilst first appearing in the context of astrology were not its central concern, Einstein dealt with (sometimes through reformulation of the problem as with gravitation) problems which were of central concern to physicists working within the Newtonian tradition. Thus Einstein came to replace Newton within the historically continuous community of physicists, there was no split with some theorist's carrying on with the earlier endevour and others moving into new fields, the endevour, that of characterising natural events in extensional terms, was maintained if reformulated in parts and the community

was carried forward under a new paradigm.

The sort of discontinuity which leads to the establishment of a new movement, a research tradition which is sufficiently different from its antecedents to be called a different discipline seems to be one in which the new approach gives up on some earlier problems making no attempt to reconceive them. In such a situation the earlier tradition survives because the new tradition doesn't seek to do the same job and therefore isn't a candidate to replace it - we get, therefore, over a period of time, the establishment of two communities where once there was one. In some cases communities split but their interests overlap, the boundries between the 'different' approaches remain unclear. This century there has been, and probably will continue to be, a great deal of discussion about the relationships which philosophy has to both psychology and sociology. Here, I suggest, we have a recent example of disciplines splitting off from philosophy, but the boundries between the areas are ill-defined so that phenomenology is both philosophy and psychology whilst the sociology of knowledge has problems arising from the closeness of its interests to some of the traditional interests of epistemology (which itself has only become defined as a distinct part of philosophy over the last century or so.)

The recognition of particular traditions, I have suggested, is tied up with the historical continuity of communities of interest. If such a community maintains unity over changes in paradigm then we can talk of the specialist language game evolving. If the community splits, some members maintaining interest in what were established as problems central to the tradition and using the old paradigm whilst others concentrate on new problems (or problems that were previously only peripheral to the tradition), using a new paradigm, then we have the birth of a new tradition of enquiry.

In talking about historical continuity here I am trying to deal with a specific problem, that of when changes in concepts/problems/ procedures etc. should be taken to constitute evolution within a tradition and when they constitute a schism resulting in the birth of a new tradition, a new approach to the world.

What I have said does not rule out the possibility of a community of interest dying out (for whatever reasons), its language games/way(s) of looking only surviving in the form of the records members of the community have left, and those records arousing new interest only after a considerable time. In such a case there would be discontinuity of the community but continuity of paradigm (although much in the way of skills and what Polanyi calls personal knowledge would have to be rediscovered as these things cannot be written down easily.) There are also cases where a tradition which has died out is not revived but instead provides inspiration for a new paradigm in a related field. Thus Chomsky, in 'Cartesian Linguistics' draws inspiration from the mediaeval grammarians for his psycho-linguistics without adopting their conceptual framework, Here we have a sort of link through time, but not, perhaps, one which could be termed the renaissance of a previously neglected perpective on (some aspect of) the world.

These, however, aren't pressing problems, just areas which if left unmentioned might allow the possibility of confusion and, as such, need to be clarified. My main interest is in looking at clearly defined traditions of enquiry in order to show the importance of specific sorts of problem in defining them. It is (I believe) important to see that human understanding is as much to do with the problems (and hence the value systems) which people have as with the nature of the world.

It is a fact of life that the world and our being in it is a source of problems for us. The world in which we find ourselves becomes problematic as soon as we begin to exercise our agency and/or to reflect upon it. In many animals most action is instinctive (and, perhaps, not properly to be thought of as action in a sense involving intention). But in human understanding we find an ability to construct models of the world which, when successful, enable us to act more purposely and to satisfy our more intellectual appetites. A hunter can learn about the animals he hunts and about the terrain in which they live and can become a more successful hunter in terms of providing food. The reflective man can, similarly, create a metaphysical model of the universe and of humanity's role in it which he finds satisfying, even if criteria for the model's accuracy are not as easily defined where the explanation offered has no predictive function.

The central theme I want to stress is that the world becomes problematic only when we engage with it or find it impinging on our lives uninvited. When the world becomes problematic we need, in order to solve or overcome the problems, a characterisation of those aspects of the world which we find problematic. And unless we have some purpose which the world frustrates we have no problems - this remains true even if all we are after is a quiet life, in that case the world becomes problematic when it 'insists' on disrupting our peace and tranquility.

Some might want to say that this sort of characterisation is reasonable when we're talking about science and technology, but that some areas don't fit this sort of model. The earliest philosophy, for instance, asked questions like, 'What is it to be real, to exist,' and it could be argued that there is no problem here which arises from engagement with the world. My reply to such an assertion is that we ourselves are in the world and that engagement with the world cannot be properly contrasted

with engagement with ourselves.

Questions of philosophy, and religious questions, arise from questions asked by people on matters which concern them. The complexity and endurance of a wide variety of metaphysical and theological explanations of ourselves and our relationship to the world seem to me to show one thing - that human beings have always found life and it often apparent futility problematic. No matter how much specialists might want to represent such questions as esoterica which can only be grasped by the more gifted amongst us I believe they are wrong. Even if most of us spend most of our lives protected from taking responsibility for our actions by settling for inauthenticity, by simply doing what 'one' does in 'this' context and by tacitly accepting the notion that conformity is its own justification we are never'safe'. Few people get through their lives without being confronted by some event which raises the old and intractable questions like, 'What ought I to do?' or 'What is all this about?' The world, both the often cruel world of nature and the often nasty, vicicus and brutal social world, presents us with situations where such questions must be raised even by the dullest of people. It seems clear to me that such questions are important not because disinterested reflection reveals them as such, but because anyone living in the world must, at least on some occasion, be faced with a war, a natural tragedy, or some less major occurrence which nevertheless raises a whole host of questions of the sort under discussion. Trying to make sense, for example, of the death of someone close is something which many people find themselves having to do, and engagement with such problems <u>is</u> engagement with the massive problems concerning the significances of our lives and our deaths.

Problems play a central role in the generation of knowledge, in the activity of knowing. I am not forwarding a false thesis here to the effect that problems play a crucial role in every situation where someone comes to

know something. It's quite obvious that we can accidently notice that such and such is the case or else an event can be sufficiently spectacular, or unusual, so as to 'grab' our attention. But the level at which such things occur is one where we already possess a way of looking which we use idly or accidently or which is 'switched-in' as our attention is held by some event.

The level at which problems are crucial is that at which ways of looking are generated. Again some might raise moral discourse as a counter example here, asking whether it makes sense to suggest that there are problems which are constitutive (in part) of morality. It seems to me that an important element in moral discourse (perhaps the central element, although there are those who would disagree) is the need for rules by which social conduct is regulated. It seems to me that any society needs such rules simply in order for people to be able to live their lives in some sort of security. Moral discourse, it seems to me, is, in part at least, a way of solving the problems which arise when people live together, a way of deciding what the rules which regulate social intercourse should be. So moral discourse can be seen to have a problem-solving basis. It is important to realise that whether we see moral discourse as a means of reaching agreement on rules, as a way of discovering moral imperatives or whatever, the sorts of questions we ask, the sort of issues that we see as important, are dictated not merely by the findings of disinterested reason - they are intimately connected with the problems that arise in life.

We are all, to some extent, passive recipients of established ways of looking. The difference between the levels of passivity and activity in language is the difference between a passive recipient of a set of linguistic traditions and someone who engages with the world in an attempt to make sense of it. To some extent we must all passively receive a linguistic tradition - we must learn a language which has been spoken before our birth in order to enter fully into our linguistic community.

At some point, though, we should realise that the ways of looking we have inherited (both specialist and non - specialist) are not sacrosanct, they are ways of looking which have been built up for reasons and which do a particular job. This being the case we can reject or make changes to ways of looking, we can raise objections to them, point out facts which they should, but do not, explain and generally modify any language game in ways which seem reasonable. This is one way in which language games evolve although it should be said that not all changes in ways of looking are made either explicitly or rationally. Ordinary language changes through time but the processess involved are not very well understood to date. In specialist disciplines the changes are usually explicit and traceable back to their origins, usually in the work of a particular worker or group of workers in the particular field. But not all changes in the systematic disciplines are made rationally, sometimes powerful institutions or individuals or ideas exercise a sort of tyranny on thought. Lysenko in 20th century Russia used his power to push a particular (and fallacious) view of genetics and the church held up scientific progress for years - Galileo's masterpiece 'Discourses and Mathematical Demonstrations Concerning Two New Sciences', the first step towards a mathematical physics, had to be published surreptitiously in Holland because he was out of favour with the Catholic church which had banned the publication of any of his works. More widespread is a sort of intellectual inertia which often drags back progress. Often a paradigm change in the systematic disciplines will be fought tooth and nail by certain elements in a community, and, although the throwing out of a whole way of looking isn't something to be done lightly, sometimes the defenders of the old way of looking will go far beyond the demands of rationality and can be seen as defending themselves and their positions against something new which they have difficulty in grasping. And finally intellectual

inertia can be found in researchers themselves who often hang on to incorrect ideas because the insecurity of jettisoning them is too much too soon for them (as well as for others.) Galileo argued for a heliocentric universe but hung on to circular orbits, Newton moved further along the road to a physicalist view of natural events but still echoed an earlier view in his evocation of God as the 'keeper' of the planets in their orbits. Even Einstein was unable to accept his own logic completely, he modified some of his equations, admitting that the modifications were unjustified, in order to keep time constant. Later in his life when it became clear that mass did indeed affect time, he corrected this mistake.

But I have digressed from the attempt to show the centrality of problems in the generation of ways of looking. The first step here must be to recall my earlier point that a way of looking is a way of looking at something. We attempt to produce specialist accounts of particular phenomena and what sort of approach will give a good account will depend on the phenomena in which we're interested. So the object of our interest will dictate, to some extent, the way of looking we end up with. But our interest must come first - we've got to begin regarding certain aspects of the world as interesting/problematic before we start giving any account of them.

The second step must be to realise that the nature of the world isn't the only constraint upon the ways of looking we come up with, we must also decide what sort of account we're looking for and here again our conception of the problem we are engaged in solving plays a part. If we're interested in willow trees as members of the plant kingdom and want to establish similarities between willow trees and other plants in order to fit them into a general classification of plants, or in a evolutionary system, certain ways of looking will be found more useful than others. If we want to make cricket bats we will find

ourselves using different ways of looking at willow trees.

Another example of the way problems make ways of looking appropriate or inappropriate is in the case of using purely extensional characterisations of people - here is a case where we do have a clear logical distinction, that between extensional and intentional characterisations. A purely extensional account of people will not, as I have argued, tell us anything about anyone's state of mind, but it will tell us a great deal about their physiology and about what can go wrong with the human body viewed as a complex mechanism. Such an account enables doctors to repair broken bones, cure diseases and remove diseased organs, so a purely extentional account of human beings is something that it's useful to have. On the other hand a purely extensional psychology is just an inappropriate way of trying to deal with psychological problems.

The most important areas where problems play a role, though, is in the case of paradigm changes within the systematic disciplines. In this sort of situation an established (and often fruitful in its day) way of looking is in trouble, the weight of anomalies has become too great to be ignored and the old paradigm is no longer as fruitful as it once was. The question that has been asked about such situations over the last few decades is that of whether the choice of a new paradigm to replace the old one can be made on rational grounds or whether the choice is inescapably tied up with irrational psychological trends, for instance the desire of an aggressive younger generation of workers to depose the 'ruling clique' who vouch for the old paradigm. This idea of a paradigm being tied to an élite within a disciplne and a change of paradigm as being a sort of coup d'état may well correspond to some extent to the way things do happen within disciplines when viewed as social institutions in which people make careers and seek prestige, well paid jobs, and research grants. Indeed this basic approach

has been adopted by sociologists whose purpose is to look at human life in such terms, and such ways of looking do, I would readily accept, give insights into the problems of life which are very valuable.

The sociological way of looking at disciplines, however, can be carried too far. In particular certain sociologists of knowledge, for instance Berger and Luckmann, and Mannheim, seem to have gone too far in the direction of relativism, as did Kuhn in his 'Structure of Scientific Revolutions' (although Kuhn has modified his position according to Barbour). The suggestion of these very relativistic writers is that truth is a matter of agreement, within a form of life, on the use of language. Thus truth in a systematic discipline comes down to a question of which language game is being used and hence of which paradigm the discipline is being directed by. There is a tendancy, especially in Kuhn's initial position to regard language games as logically distinct so that words which occur in different language games have different meanings even if they have the same inscriptions. A change in paradigm on this view is sudden dislocation, a jumping between two logically distinct language games. This asserted distinctness in language games, and hence in meanings of key terms, leads to the view that different paradigms are incommensurable, that there can be no communication between initiates of different paradigm and hence that a change of paradigm can only take place on the basis of the coup d'état model I outlined in the previous paragraph. This total relativisation of ways of looking and hence knowledge denies that there is any possibility of rationally deciding between paradigms. Thus any such paradigm change is, on this view, a revolution. Toulmin, in 'Human Understanding vol. 1' makes it clear that even a radical change, like that from Newton to Einstein in physics, doesn't seem to have amounted to a revolution in the Kuhnian sense. He writes: (P.104)

> "The professional careers of many theortical physicists spanned the years from 1890 to 1930,

> and these men lived through the changeover in question. If there had in fact been any breakdown in communication, of the sort to be expected in an authentic scientific revolution, we should be able to find it from the testimony of these physicists. What do we find? If there was such a revolution, the men directly involved were curiously unaware of it. After the event, many of them explained very articulately the considerations that prompted their decision to switch from a classical to a relativistic position; and they reported these considerations as being the reasons which justified their change, not merely the motives which caused it."

(Toulmin gives as examples of such records Max Planck's 'A Scientific Autobiography' Max Born's 'Physics in my Generation' and Einstein's 'Albert Einstein, Philosopher - Scientist.')

I think that it is unnecessary for me to go into any more detailed critique of Kuhn than this. It seems clear that while Kahn does point out (as do others) that the nature of disciplines as institutions can be seen to be militate against rationality in some ways, his elevation of these facts of institutionalised life into a social basis for epistemology is just going too far.

The central error built into this sort of approach, it seems, is the assumption that language games are logically distinct and hence that there can be no communication between specialists whose specialist modes of language are based on different paradigms. If this were the case then the coup d'état model would be the only way to explain paradigm changes, but it isn't the case. We must, as I have said, regard language games as historically continuous traditions directed towards certain aspects of the world and modifying basic presuppositions about those phenomena through time in order to make better sense of them. What changes occur is up to the community which uses a particular language game and changes may occur for many reasons, some rationally explicable, some not.

A systematic discipline must, as I have argued, be

regarded as a historically continuous endeavour constituted by a community which, at any particular point in time, is united by a shared interest in certain sorts of problems and common purpose, in terms of trying to solve those problems. Insofar as a paradigm change carries the community with it this historical continuity can survive such changes, but schisms can occur and I have already discussed the problem of when we have the same discipline under a new paradigm and when we have the splitting-off of a new discipline. So long as a discipline survives paradigm changes intact, so long as the changes in concepts and problems carry the relevant community along and replace, rather than set up in opposition to, earlier ways of looking, then we have an evolutionary process, a process in which it is proper to speak of one language game developing through time. There seems to me to be no reason why this process of change cannot be based on rational discussion (although it is a matter of fact that sometimes it is not - eg. the Lysenko case) and, as Toulmin noted, in at least one major instance of paradigm change, that from Newton to Einstein, the available evidence suggests that much careful discussion took place before the new paradigm was adopted.

Usually a particular discipline (or, in many cases,a particular speciality within a discipline) at a particular time will be based upon the presuppositions constitutive of a particular paradigm. The paradigm, however, is never wholly safe. Within a discipline coherence is strived for but researchers working in different areas may diverge so that all disciplines embody certain embarrassing inconsistencies at all times, and sometimes factions associated with such differences can become so polarised that they seem hardly to be members of the same community - the various schools of sociology seem to be an example of this and the philosophy of language seems to be heading that way with the split between the 'anthropological' school (as the followers of Wittgenstein and Austin are sometimes designated) and the 'structuralist' school (if

Davidson etal really are claiming explanatory power for their metalinguistic theories) becoming more and more marked. In general, though, there is usually enough concensus within a discipline for the current paradigm to provide a basis for agreement without actually being made explicit.

The paradigm always embodies assumptions about the world and such assumptions, although often granted immunity from doubt for as long as they prove fruitful (and this 'fruitful' can only make sense in terms of the problem-solving purposes of the discipline), are nevertheless open to questioning if they prove unhelpful in solving crucial problems. One question that can always be asked of a paradigm is, "Will this way of looking do the job?" - which is a way of asking whether the adoption of a particular way of looking will give an acceptable account of what the discipline is interested in, or, put in another way, will the paradigm be a better problem solver than any other candidate?.

If an old paradigm is falling down on the job it is always possible to ask this question about any new paradigms that are offered as replacements. There is no certainty that the community will make the right choice, but arguments can, in principle, be put forward to support the contention that one paradigm will do a particular job better than another.

The important thing to grasp here is that it is a discipline's explanatory purposes, its central problems that are crucial in choosing rationally between paradigms. In a case where two new paradigms are 'on offer' and there seems no real difference between them in terms of internal coherence or fitting the available data a discussion can still be held about which way of looking is likely to get the discipline further. And this sort of discussion can take place in a mode of language not tied to either paradigm. Because language games are not

distinct we can discuss physics (say) from the point of view of philosophy or sociology, or even ordinary language without any great difficulty. Even more important is the fact that a discipline's problems can themselves be discussed from a standpoint not tied to the presuppositional basis of a particular paradigm in the discipline.

One important way in which we can do this is by raising moral questions about a discipline. We can say, for instance, that whilst its' quite acceptable for physics to offer a purely extensional account of the human body we won't accept a physicalist account of mind. The point is that physics has maintained its physicalist nature through the change from Newton to Einstein. Physicists are slowly changing from a rigidly deterministic model in which all events were seen as being, in principle, precisely predictable, to a probabilistic model in which events are seen as the result of the patterns resulting from large numbers of random subatomic events. But their way of looking remains extensional and hence any claim by physicists to be able to deal adequately with mind must remain either reductionist or wrong in some other way. Now at the present state of the game a physicalist might still feel able to both admit that physics cannot deal adequately with mind and express a faith that it will be able to in time (I disagree with such views for reasons given, but there is no doubt this controversy is one which is still very much alive). But in view of the fact that physics cannot now deal adequately with mind and the existence of arguments to the effect that it cannot do so in principle, the actual use of physicalist 'psychology' can be regarded as suspect. The moral argument would come down to the observation that as the physicalist view of mind seems both to deny the person-hood of people and to be unjustified, then those who insist on regarding mind as a matter only of brain circuitry are morally culpable. A deeper moral objection,

one which follows from my earlier discussion of mechanism, would be to the effect that as physics expressly excludes intentionality from its way of looking the decision to look at mind in a physicalist way just is a decision to ignore the idea that people are conscious agents. Thus, it could be argued, to adopt a physicalist view of mind is to pre-judge a very important issue, to decide that people just are not conscious, that we exercise no agency, and to approach people in that way must be, in the absence of a strong justification, morally culpable.

Similarly the scientist who claims (and this is a straw man) that God doesn't exist because physics has no need of the hypothesis is missing the point - physics gets on very well without evoking God, but physics is only one way of looking at the world, or perhaps I should say a way of looking at only part of the world. Physics cannot say anything about God, it can't say anything about love (except some of the physiological aspects) or about the beauty of a painting. The scientific ways of looking are important but they are only part of human understanding - Einstein himself was once asked if physics could deal with art, his reply was that we could, if we wanted, represent Beethoven's ninth as an air pressure curve, but that it would be, as far as he could see, a worthless activity.

In my next two sections I will say more about the relation between problem-solving, the progress of understanding, and the sense in which our understanding can get better, can capture more completely how things are in the world.

Problems and Progress.

So far I have undermined the contention that the disciplines are concerned simply with understanding the natures of various sorts of 'thing'. 'Things', it seems, are always describable in a number of ways (e.g. the box which is both beautiful and heavy), and there seems little justification for simply assuming that, for instance, the way of looking used by physics has ontological priority over, say, that used by aesthetics. In perception we have access to a world of 'things', but that the conceptual framework(s) built into the specialist language game(s) which physicists use has ontological primary, more nearly captures the way things are than any other mode of description, is a position which, though many seem to believe it true, is very difficult to support. As I pointed out earlier different modes of description grow up socially as people try to make sense of different aspects of the world, both the natural world and the social world. The important question is that of how, given the existence of different ways of looking, often at the same 'things', can we sort out those situations in which two ways of looking are in direct competition, thus making it necessary to choose between them, and those situations in which two ways of looking are seeking to do two different jobs and so can co-exist as complementary accounts. The most pressing problem is that of identifying and comparatively evaluating competing paradigms. Unless we can show that, in principle, competing paradigms can be rationally evaluated we cannot show that there is such a thing as progress, as opposed to mere change, in the systematic disciplines. Without rational criteria for what constitutes progress we cannot justify any claim that a succession of changes in a discipline, either of particular theories or of more basic paradigms, has in any way led to a better understanding of those phenomena a discipline seeks to explain.

It seems to me that the identification and comparative evaluation of competing theories/complexes of theories/ paradigms must take place by way of looking at the explanatory interests of those forwarding the accounts. And this comes down to investigating what problem or range of problems a theory/paradigm is aimed at solving. The sorts of problems I'm talking about vary widely. At the 'basement' level there are everyday phenomena, such as a mirror reflecting an image, which are well known at an ordinary language level and which become specialist problems as specialist communities seek a satisfactory explanation-in-detail of why a mirror performs as it does. Basic empirical problems such as these can underpin an empirical discipline through paradigm changes although different paradigms may put different degrees of stress on different problems. Thus any theory of optics over the last three hundred years has had to deal with mirror images and the diffraction of light through prisms and the solving of these problems has constituted at least a part of the criteria for the acceptance of any new theory of optics. These problems are not stated in a theoretically neutral observation language, they are stated in ordinary language and presuppose the (often philosophically naive) ontological standpoint, the general world view, built into that language. But this tacit theoretical basis built into the statement of the problem does not unavoidably taint all specialist theories. A problem only becomes of specialist interest insofar as ordinary common sense accounts are seen to be poor in, or devoid of, explanatory power.

Only when we realise that our everyday, vague, explanations of the world <u>are</u> vague and often don't explain anything at all do we start uncovering areas where much more needs to be said. And these are the areas where systematic enquiry into some well known problem leads to the problem and the problematic phenomena being re-conceived. If a radical reconception

(like Einstein's explanation of gravity in terms of warped space) of a problem/phenomenon leads to solution of outstanding explanatory problems, then the new theory can be shown to be better than previous theories. This is too simplistic. On my account so far an account of progress seems to be that if a new paradigm/theory leads to the solution of all the basic empirical problems solved by older paradigms/theories and to the solutions of problems which older theories/paradigms couldn't solve, then the new paradigm/theory is better than the old one. But this isn't quite how things work.

Typically progress in the disciplines involves some problems being rejected as non-problems, for instance the replacement of the phlogiston theory with a theory of burning-as-oxidisation involved seeing oxidisation theory as better than phlogiston theory as a solution of the problem of giving a rigorous account of what is involved when something burns. But oxidisation theory doesn't solve all the problems of phlogiston theory and then some more. Oxidation theory doesn't solve the problem of the nature of phlogiston, the nature of that part of matter which is consumed when something is burned. It gets round this problem by solving the basic empirical problem in terms which make questions about the nature of phlogiston irrelevent and inadmissable. In the oxidation/phlogiston theory example oxidation theory does, in fact, solve one problem which phlogiston theory never quite came to grips with, namely the problem of explaining why ashes weigh more than the matter they are ashes of. Phlogiston theory, which said that in combustion phlogiston is burned off, needs to postulate a negative weight to explain this fact, and the notion of a negative weight is not an attractive one - at first glance we might even wonder about its coherence. Oxidation theory, which explains burning as a chemical reaction in which atmospheric oxygen is combined with the matter being burned, has an increase in weight during burning as a direct implication of its basic model and this accordance with well known and problematic (for phlogiston

theories) facts undoubtably played an important part in the replacement of phlogiston theory with an oxidisation theory of burning. It should be mentioned that the superiority of oxidation theory over phlogiston theory was demonstrable only given controlled experiments- if burning is done in the open loss of material as smoke leads to a net loss of weight as the smoke usually weighs more than the combined oxygen.

We must distinguish, then, between two different sorts of problems. First there are the basic problems, see-able as problems from the point of view of ordinary language. These basic problems remain problems for any theory which seeks to explain the relevant phenomena. Mirrors reflecting images, prisms defracting light, things burning, these are the basic explanatory problems which any acceptable theory in the relevant field must solve.

But when a specialist account of something is given new problems are generated by the theory itself. Any explanation of burning must account for phenomena like increased weight after combustion, but a problem like that of the nature of phlogiston is only a problem for phlogliston theory. What seems to be the case in any discipline at a point in time is that there are a number of central and basic problems which any relevant theory must solve. Beyond this there tend to be certain other problems which existing theories have difficulties with. These problems can be of two sorts. They can simply be basic problems which had not previously seen as part of the problem-core that any acceptable theory should have solved but which have become part of that core for new theories as their intractability has been noted. And the problems can be internal to a theory, problems which are only problems for a particular theory or group of theories - like the nature of phlogiston.

These internal problems are not always problems just

for particular theories. All particular theories lean for support upon certain metaphysical assumptions, assumptions which are built into a paradigm. Paradigms don't themselves have directly checkable implications about the world, rather a paradigm dictates what sort of theory is acceptable in a discipline. Insofar as theories generated in accordance with some paradigms perform adequately as problem solvers in the relevant domain we come, as I have said, to have confidence that the metaphysical assumptions built into the paradigm capture the nature of the world to a reasonable degree. But conversely the existence of basic problems which no theory constructed under a particular paradigm seems able to solve will ultimately, if the problems come to be seen as blocking progress (i.e. as important enough not merely to be set on one side as anomalies), lead to that paradigm being called into question, particularly if a new paradigm is on offer.

A paradigm has important internal problems if no theory constructed in accordance with it can solve basic problems which seem to fall within its domain. A body of theory can fall if, like phlogiston theory, it has implications which seem counterfactual or else if it can only solve basic problems by doubtful manoeuvres (like giving phlogiston a negative weight). But paradigms and theories also must deal with conceptual problems. The clearest sort of problem here is that of internal inconsistency, but this is a clear cut case where logical untenability can be shown. Less clear are cases where a discipline's basic model of the world is tenable in itself but contradicts some deeply entrenched world view. The tension between theology and the sciences from Galileo to Darwin resulted from science coming to be based on a mechanistic model which became slowly less and less compatible with the religious world view which held sway in European culture. At a lower level two theories constructed under one paradigm can contradict one another, for instance Maxwell's pioneering work on electro-magnetic fields resulted from his

noting a contradiction between Ampere's fourth law of electro dynamics and another law of mathematical physics, the equation of continuity. Since these laws were formulated in tackling the problems of electric currents in wires an inconsistency between them seemed unacceptable and Maxwell added a term to Ampere's equations on purely mathematical grounds which secured consistency between the laws. Maxwell finally postulated the existence of electro-magnetic fields on the basis of interpreting what this extra term might stand for. In such cases, where two theories are dealing with related problems, inconsistencies between theories can either be resolved by modifying one or both theories or else we can try to show that one theory is, in fact, a more successful problem solver than the other. This situation, however, is one in which the paradigm is not in question and so the problem of choice is not so acute.

The really accute problem occurs when the theories in competition are based on different paradigms, when we find ourselves not just examining the problem solving power and compatibility of two theories constructed under one paradigm, but instead find ourselves wondering which of two sets of metaphysical presuppositions about the world seems most justified.

In his book, 'Progress and its Problems,' Larry Laudan argues that two research traditions (ie. paradigms in my terminology) can be comparatively (and rationally) evaluated in terms of their progressiveness. Laudan talks about a research tradition's momentary adequacy in terms of how good, at a point in time, the particular theories generated under the tradition's paradigm are as problem solvers. He measures a tradition's progressiveness in two ways (p.107):

> "1. the general progress of a research tradition - this is determined by comparing the adequacy of the sets of theories which constitute the the oldest and those which constitute the most recent versions of the research tradition;

2. the rate of progress of a research tradition - here, the changes in momentary adequacy of the research tradition during any specified time span are identified."

Laudan's work is geared primarily to giving an account of scientific progress and so tends to assume that the domain of basic problems is similar for competing theories. But he is aware that even the basic problems are re-conceived as they are stated in specialist language and so chooses to measure different paradigms' progressiveness in their own terms. He also makes it clear that in terms of paradigm change it is likely to be the rate of progress rather than the general progress of a research tradition which is crucial. This is because one of the prime motivations for paradigm change is the belief (quite often rational) that a research tradition is running out of steam. The general progress of classical physics from Newton to the late 19th century was very high, and certainly Einstein's early work had nothing like the proven problem solving power of classical theories. But what is also the case is that during the last few decades of the 19th century certain basic problems of physics, like explaining gravity, were proving intractable, there were significant discrepancies between predicted and observed events, such as the position of the perihelion of Mercury, and there were experiements, like those carried out by Michelson and Morley (in 1881) timing a beam of light travelling from source to mirror and back, which gave unexpected results. The expected result, under classical assumptions, was that if the direction of source to mirror was in the same direction as the earth's motion, then the actual time for the beam to travel from source to mirror and back would be greater than the time that would have been taken if the earth was stationary. In fact, however, no measurable difference was noted and this undermined the classical model of the earth moving through a stationary aether.

For classical physics such problems were anomalies which, for so long as the paradigm was fruitful in generating problem solving theories in other areas, were merely put to one side. But as the rate of progress of classical physics fell off and such anomalies remained intractable physicists started to see them as important problems that had to be brought into the disciplines 'problem-core' - problems which any new theory had to solve. Einstein's early account didn't have such a large store of solved problems as classical physics, but he offered solutions to what had been intractable problems for the Newtonians. This means that although the Einsteinian paradigm/research tradition didn't have as good a general progress as the older Newtonian paradigm it did have a high rate of progress when compared to the older paradigm which had become almost wrung dry. Laudan's point is that choosing a new and not-yet-fully-tried paradigm over an older, more detailed and proven paradigm can be the rational thing to do in cases where the older paradigm is over laden with anomalies which constitute problems for which it seems unable to indicate any way of solution. If a new, relatively undeveloped paradigm can solve the (re-conceived) problems which the older paradigm couldn't deal with, then the rational course is to give up riding the experienced war horse whose best years seem to have gone and, instead, take a risk with the promising young colt that still needs a lot of work on it but seems likely to do well in future. Of course, we're never absolutely certain about whether a new paradigm will turn out as we expect, such is the uncertainty of life. But we can at least see that the progressiveness of a research tradition/paradigm, especially its recent rate of progress, can be used as one way in which we can rationally decide whether to jettison a (worked out) paradigm and replace it with a more vigorous new approach.

Laudan's approach doesn't make the mistake of regarding progress as necessarily cumulative, a process in which a

new paradigm must solve all earlier problems and then more. He does suggest that there is, in most disciplines, at any point in time, a core of basic problems which any theory at that time must solve to be acceptable, but he also makes it clear that this core can change as experience reveals some core problems as not so important and other problems, formerly regarded as peripheral, become part of the core, for instance through anomalies persistently turning up which make the problem a hinderance to a number of workers.

The important thing to be remembered is that a paradigm change is a change in the way specialists, when wearing their specialists' hats, conceive the world. This doesn't mean that proponents of different paradigms can't understand each other, they can still discuss the merits, as problem solvers, of the theories constructed under different paradigms. But it does mean that different paradigms designed to deal with the same basic problems (the same from an ordinary language view point) will reconceive those problems differently and hence will generate other, internal, problems, like phlogiston theory carrying with it the problem of saying something about the nature of phlogiston, a problem which oxidation theory avoided by declaring it a non-problem. So even at the level of what empirical problems are solved, the only shared problems are likely to be those which are the area's problem-core. Internal problems, those which arise through implications built into a particular theory, won't be shared. Similarly conceptual problems won't necessarily be shared. If two new paradigms are inseparable in terms of solving other sorts of problems and one is logically incompatible with a very progressive paradigm in a related field of study whilst the other isn't, then the paradigm with fewer serious conceptual problems is quite reasonably to be preferred. Competing paradigms may share conceptual problems, but again may not. Thus when we add up the problems, basic empirical problems, internal problems (including

conceptual problems) of competing paradigms in an area we are likely to fing that, apart from the discipline's problem core, the paradigms will share few problems.

I should make clear that not all core problems in all disciplines will be empirical. A central problem for pure mathematics is the giving of a rigorous basis for our concept of number. This might be characterised as an empirical problem insofar as the mathematician is trying to elucidate a notion which is familiar to everybody through everyday involvement with such things as counting, deciding whether a cake has been divided up equally etc,. But, in fact, the mathematician working on the analytic base of the natural numbers, (positive integers), the rational numbers (fractions), the irrational numbers (e.g. $\sqrt{2}$) etc., is primarily concerned with demonstrating rigorously that the numbers we use in everyday life make sense. It's no accident that Russell's book on the analytic basis of maths, written just before Principia Mathematica, was called 'An Introduction to the Philosophy of Mathematics'. Mathematical analysts are concerned with the logical foundations of their subject, their interest in the concept(s) of number is in making rigorous analytic sense of what numbers might be taken to be. Thus the problem core of mathematics includes conceptual problems - and in general it will depend upon what discipline we're looking at whether the problem core is predominantly empirical or conceptual. Symbolic logic and pure mathematics will have a core of predominantly conceptual problems. Philosophy also deals with predominantly conceptual problems, although the importance of elucidating the concept of a person (say) must relate to the empirical importance of our everyday notion of a person in human life. Physics is, of course, predominantly concerned with empirical problems.

It is probably a good idea at this point to look again at the distinctions made between different sorts

of problems as most of my examples so far have taken basic problems as empirical problems and hence distinct from conceptual problems in a clear cut way. My example of the mathematical analyst's interest in number seems to blur this distinction and so I must make my distinctions clearer.

The basement level is that at which basic problems, problems we can see as problems from a non-specialist standpoint are picked out. These can be empirical problems like trying to explain what happens when some thing burns or conceptual problems, like trying to make rigorous sense of our everyday concept of number. The reasons why people pick on 'this or 'that' problem for specialist investigation vary widely, as earlier discussion should have made clear, from mystical convictions (e.g. the Pythagoreans), through practical interest (Cardin's gambling) to pure interest for its own sake (the non-Euclidean geometers).

The important thing about basic problems is that they are problems before the fact of theorising, they are what the theory is designed to solve. Internal problems are problems resulting from the theory and again can be either empirical or conceptual. The problem of characterising phlogisten is an internal empirical problem for phlogiston theory. Important internal conceptual problems include problems with the internal coherence of the system of theories generated under a paradigm (e.g. the Maxwell example). Coherence is aimed for and any new theory incompatible with other theories in the field will have a serious conceptual problem. Similarly a whole paradigm can be questioned if, as with behaviourist psychology, its entire conceptual basis seems incoherent. And internal conceptual problems can arise for a paradigm if it is logically incompatible with a paradigm which is already a proven problem solver in a related field, or if different areas approach a problem using conceptually different paradigms. (e.g. the conceptual problems

generated by the different approaches to the problem of perception adopted by psychologists, physiologists and computer modelers). Internal problems, as I use the term, does not mean simply the problems which arise inside a theory/paradigm viewed in isolation. These problems are included, but so are other problems which arise because of tension between ways of looking generated in the attempt to solve different but related problems. Internal problems are internal to a theory/paradigm only in the sense that their existence as problems is dependent, in part at least, on the form of the particular theory, they are problems generated by the theory - a different theory would have different internal problems. Basic problems, on the other hand, are problems which are generated in everyday life, problems encountered in the world. They are problems which have been picked out as problems from a non-specialist, ordinary language point of view.

Progress isn't cumulative in any simplistic 'building block' way. It's not even safe to suggest that progress is cumulative in respect of solving basic problems. Basic problems are always stated in ordinary language and carry with them the metaphysical assumptions constitutive of the general world view of the culture in the context of which the problem is stated. Thus for some cultures the characterisation of the nature and behaviour of spirits and demons might be seen as a basic empirical problem and priesthoods have spent much intellectual effort on problems of this sort throughout human history. In the developed world we have rejected, not solved, such problems, our world view has changed and so have the basic problems. We see, as the ancient Egyptians saw, stars twinkling in the night sky, but when we ask questions about those stars we do so against the backgroung of a very different world view. Some problems, like saying something about the tiny twinkling lights we see in the night sky, are common to different cultures, but others, like the nature of spirits and demons are not. Since the selections of any

discipline's basic problems will be influenced by a culturally variable world view which will change through time for many reasons, including feedback from specialist ways of looking, progress will involve some 'problems' being declared non-problems. And it must always be remembered that the experiences of the theorists themselves, especially the way a problem or family of problems keeps on cropping up during research, will lead to the problem core changing. Thus a central problem may, in time, become a mere anomally, and vice versa. So progress is not simplistically cumulative at all.

This cultural relativity of beliefs and hence basic problems doesn't imply relativity of specialist ways of looking. A discipline progresses by trying out promising paradigms, discovering their strengths and weaknesses and rejecting them for something better. A discipline's starting point must be a world view formulated in a wider cultural context than that of a specialist community of interest and so any discipline must start off from a way of looking that will probably embody a mish-mash of vague and ill-matched notions but it is not trapped by that starting point - which is to say that paradigm changes can occur for the better. The next problem to be dealt with is, of course, that of how we can justify the claim that a more progressive paradigm (in Laudan's sense) <u>is</u> a better one in terms of giving us a better understanding of some aspects of the world.

Laudan himself tries to avoid this sort of question. He writes: (p.125)

> "In arguing for this approach to science, I am deliberately driving a wedge between several issues that have hitherto been closely intertwined. Specifically, it has normally been held that any assessment of either rationality or scientific progress is inevitably bound up with the question of the <u>truth</u> of scientific theories.

> Rationality, it is usually argued, amounts to accepting those statements about the world which we have good reason for believing to be true. Progress, in its turn, is usually seen as a successive attainment of the truth as a process of approximation and self-correction. I want to turn the usual view on its head by making rationality parasitic upon progressiveness. To make rational choices is, on this view, to make choices which are progressive. (ie. which increase the problem-solving effectiveness of the theories we accept.) By this linking rationality to progressiveness, I am suggesting that we can have a theory of rationality without presupposing anything about veracity or verisimilitude of the theories we judge to be rational or irrational."

Laudan adopts this position on rationality in an effort to avoid what has become a quagmire in recent years. The positivist position, espoused most notably by Popper, which claims that progress is towards truth (ie. towards saying how things really are in the world) is in disarray. Also on p.125 Laudan writes of efforts to support the positivist position:

> "Without exception, these efforts have foundered because no one has been able to demonstrate that a system like science, with the methods it has at its disposal, can be guaranteed to reach the 'Truth' either in the short or in the long run. If rationality consists in believing only what we can reasonably presume to be true, and if we define 'truth' in its classical, non-pragmatic sense, then science is (and will forever remain) irrational."

The point here is that without criteria for what it is for something to be true-of-the-world, criteria which we don't possess, it is difficult to see how a claim that science progresses towards such truth can be supported. Popper's position, which seems basically to say that progress is towards such truth even though we can never know how close we've got, seems unhelpful here. Given his assertion that science progresses via falsifiability we must ask about the status of this absolutist element in his account. If someone was to assert that Popper is wrong because we cannot, in principle, acquire this final,

absolute truth then that person would be in a position of denying an absolute, of saying that it is absolutely true that we cannot acquire absolute truth - and such an assertion is self contradictory. Absolutist assertions are logically undeniable, it doesn't make sense to deny them. But this doesn't guarantee the truth of such assertions. After all $\sim(A \sim A)$ is an absolute truth in the sense that its denial makes no sense to us, but some mathematicians, logicians and sub-atomic physicists have found it necessary to refuse to assert it, to opt for modal logic as the basis for their work on certain problems. As Popper's assertion that progress is towards truth-about-how-things-are is unfalsifiable given that we haven't got criteria for this notion of truth it is not a scientific statement in the sense that Popper himself propounds. It seems, in fact, to be an ad hoc theory, an assertion which is alien to the rest of his account of scientific progress which is simply 'tagged on' to it, ad hoc, to solve an important problem. As Popper himself denounces 'ad hocness' as non-scientific and non-progressive he seems to have made his account incoherent by insisting that progress is towards truth. The real problem with this sort of assertion is that of evaluation, how can we decide whether what Popper (amongst others) says is true or not. Again on P.125 Laudan writes:

> "Such an approach offers few consolations, however, since no one has been able even to say what it would mean to be "closer to the truth," let alone to offer criteria for determining how we could assess such proximity. Hence, if scientific progress consists in a series of theories which represent an ever closer approximation to the truth, then science cannot be shown to be progressive."

I am in sympathy with Lauden's position here simply on the grounds that if the sort of assertion that Popper makes cannot, even as a matter of contingent fact, be tested for truth itself, than it is no more than a protestation of faith. Whatever else rational discussion

consists in it must surely involve the giving of reasons, the support of assertions by relevant argument. An assertion of faith, by its nature, cannot be supported by argument. This being the case we must, if we want to maintain the systematic disciplines as rational endeavours, refuse to allow that assertions of faith have any central role in theoretical discussion. I'm not saying that faith, for instance the following of hunches, hasn't a place in the disciplines, just that we must conclude that a statement of faith is not at all compelling as support for a theoretical assertion, cannot be any part of the grounds on which a specialist community accepts theoretical assertions if that community wants to maintain their discipline as a rational endeavour.

But Laudan's skirting of the problem of truth doesn't show it to be a non-problem. If science leads to knowledge then scientific statements must be true, we need some notion of truth to underpin the notion of scientific (or any other sort of) knowledge. In his book Laudan seems to want to say that it is rational belief not truth that the systematic disciplines deal in. On P.126 he writes:

> "The price we have to pay for this approach may be regarded by some people as too high, for it entails that we may find ourselves endorsing theories as progressive and rational which turn out, ultimately, to be false (assuming, of course, that we could ever definitely establish that any theory was false). But there is no reason for dismay at this conclusion. Most of the past theories of science are already suspected of being false; there is every reason to anticipate that current theories of science will suffer a similar fate. But the presumptive falsity of scientific theories and research traditions does not render science either irrational or non-progressive.
>
> The model under discussion here offers a means of showing how, even granting the fact that every theory of science may well be false, science may nonetheless turn out to be a worthy and intellectually significant enterprise. There will be those who will charge

> that such an approach is patently instrumentalist and that it entails that science is a hollow set of symbols and sounds, with no bearing on "the real world" or on the "truth". Such an interpretation is very wide of the mark. There is nothing in this model which rules out the possibility that, for all we know, scientific theories are true; equally, it does not preclude the possibility that scientific knowledge through time has moved closer and closer to the truth. Indeed, there is nothing I have said which would rule out a full-bodied, "realistic" interpretation of the scientific enterprise. But what I am suggesting is that we apparently do not have any way of knowing for sure (or even with some confidence) that science is true, or probable, or that it is getting closer to the truth. Such aims are utopian, in the literal sense that we can never know whether they are being achieved. To set them up as goals for scientific enquiry may be noble and edifying to those who delight in the frustration of aspiring to that which they can never (know themselves to) attain; but they are not very helpful if our object is to explain how scientific theories are (or should be) evaluated."

So, because the 'progress is towards truth' model leaves us unable to evaluate theories, Laudan opts for the course of defining progressiveness in terms of problen solving and he simple ignores questions about truth on the grounds that they are unanswerable and hence useless in terms of helping us to rationally decide which of a number of competing theories/paradigms is best. Again I am sympathetic, but I would suggest that Laudan didn't go far enough in looking at the relationship between a solution to a problem and truth. Drawing on what I have said about language games and on Barbour's account of the theory-model-world relations I will attempt to show how a series of more progressive theories can be justifiably said to give better and better accounts of the world in terms of more completely capturing the phenomena described - in terms of successive models being truer-to-the-world than their predecessors.

Problems, Progress, Models and the World.

In the last quote I gave from Laudan he stresses that he isn't denying that science might be moving towards truth (in the sense of true-to-the-world), he is simply saying that an assertion like, "This paradigm is closer to the truth than that one," is uncheckable. Since we have no clear criteria for checking its truth, Laudan argues, it is both unsupportable and useless as an indication of a way to evaluate the claim that science progressess. But there's a problem with Laudan's account which he never deals with. Any number of novel theories could be invented and labelled 'theories of progressiveness.' We might, for instance, suggest the number of workers in a discipline who demonstrablylove the opera and Napoleon Brandy as a measure of progressiveness and this would be a useable measure. It would seem an odd thing to do as it is by no means clear that liking opera and brandy is the mark of a good researcher. But what has to be realised is that our choice of criteria for progressiveness is related to what we see the disciplines as being about. Choosing criteria (as Laudan does) which maximise the progressiveeness shown by the history of science, which makes as much as possible of what scientists have done appear progressive and hence (in Laudan's terms) rational, doesn't guarantee that we've got the right ones - the 'progress' of science up to now might, for instance, be a matter of luck or might simply be illusory.

To define rationality in terms of progressiveness and to choose criteria for progressiveness which maximise (or optimise) the progressiveness of what scientists in the past have done is to make the claim, 'Science is a rational endeavour,' tautological and hence uninformative - the point is that we must first have criteria of rationality arrived at independently of looking at the history of science and then evaluate that history in terms of those criteria if, 'Science is

rational,' is to be a significant claim, one which tells us about more than how Laudan uses the term 'rational'.

Measuring progress in terms of (the rate of) problem solving is, I believe, the right approach, but what counts as a solution must surely involve a reference to capturing, to some extent, the nature of the phenomenon being described/explained. What I'm getting at is that Laudan's account cannot survive without some sort of reference to the truth he desparately tries not to rely on. Without some reference to truth we have no way of deciding what should or should not be counted as a solution to a problem. We can even go so far as to ask why we should be so enamoured of problem solving if we have no guarantee that the literature generated under this approach tells us something about the world we live in as opposed to a phantasy world invented laboriously by some specialist community. By cutting himself off from truth Laudan simply fails to say anything about the relation between scientific theory and the world we live in and this fails to establish that a progressive and rational (in his terms) discipline is anything more than an elaborate game.

I believe, however, that Laudan's mistake is remediable and that his criterion of progressiveness can be useful in evaluation. When we are faced with a problematic phenomenon, for instance a mirror, we look for an explanation. In a specialist discipline the explanation will consist in a theory generated under a paradigm and the theory will have implications for the behaviour of mirror images which will be checkable in general. Theories, if believed, give us expectations about the world, expectations that at time t 'this' will happen (eg. an eclipse of the sun) or that if we do 'this' then 'that' will happen. The case of a scientist testing a hypothesis is slightly different, he behaves 'as if' he believes the theory in order to see if there is

reason to believe it. But what remains constant is that a theoretical position has implications which are checkable against experience.

This checkability against experience isn't just the hallmark of theory in the natural sciences, sociology and psychology also must ultimately be checkable against events (past. present or future). Even history has checkability written in, if a historian gives an account of particular events at a particular time, then his account must fit the data provided by the relevant records and relics and must fit in with known facts about the general context of events. If, for instance, he maps the path of an army and it is discovered that cities on part of the route left no records of its passing and that no relics that a marching army might have left have been found, or if the rate of travel of the army indicates that it moved faster or slower or for longer periods than armies did at that time, and if the historian can't explain such anomalies, then his account will be thrown into doubt. And even our crude everyday 'theories' about people or the weather are checkable. If we judge that someone is reliable we will act accordingly and will discover our mistake if we are let down, if things don't turn out as we expected. And if we decide that the state of the clouds and breeze are such that it's not going to rain and leave our raincoats at home, then the accuracy or otherwise of our prediction will unavoidably become clear to us as we go through the day.

My suggestion is that it is this checkability against experience which gives us confidence that a paradigm, and the associated model of what sort of world we live in, manages to capture, to some extent at least, the way things are. What I am saying is that theories are used in planning action, from the activities of scientists in labs, through archeologists going out looking for artefacts in places pinpointed by their research, to people deciding whether or not to take an umbrella with

them when they go out. Insofar as the expectations a theory leads us to have are fulfilled, insofar as our actions are successful and predictions correct, we have reason to believe that the theory captures the nature of whatever we are dealing with to some degree at least. And the fewer the anomalies, unfulfilled expectations, unsuccessful courses of action, adherence to a particular theory and paradigm throws up, the more confident we are in the adequacy of the paradigm, and of the model of the world which is part of it (and I use 'model' in Barbour's sense), as a characterisation of the relevent aspects of the world.

This suggestion might be resisted by asking whether it makes sense to talk about the findings of philosophers, pure mathematicians and formal logicians having implications which are checkable against experience. It seems to me that although such findings are not always directly checkable the 'second order' disciplines can only show themselves to be more than elaborate games, interesting enough in themselves but having no relevence beyond their boundries, if the findings of workers in those areas have implications for the theorising and methodologies of workers in the 'first-order' disciplines, those whose findings do have direct implications for planning action, which are checkable against experience. The second order disciplines are involved with the sorting out of problems of coherence, in giving general guidelines for the solution of problems and for providing technical tools (especially in the case of maths) which have important implications for the methodology of empirical research. This isn't all the second order disciplines do, they have their own problems (eg. the problem of number for maths or the problem of meaning for philosophy). But the identification of the second order disciplines as having serious purposes beyond that of providing a pleasant passtime for initiates must depend on the basic problems they deal with being problems beyond the discipline's boundaries, being problems for people outside the specialist community, either problems of everyday life or

problems for other specialist communities. Thus I would maintain that any discipline must produce findings which have, directly or indirectly, implications that are checkable against experience, this checkability consisting in generating expectations which are fulfilled or not by subsequent experience. In saying this I am not ruling out retrodiction as a way of checking a theory.

In prediction data gathered at time t_0 is used to predict events at time t_1 (t_1 later than t_0). Usually the predicting is done at a time between t_0 and t_1, but this need not be the case - we could check a theory by using already available data, 'predicting' the events at t_1 at a later time. There would be nothing wrong with such a check so long as no data unavailable at t_0 was used in making the prediction. The difference between prediction and retrodiction is that in the former we use data from t_0 to say what will(or did) happen at t_1 and in the latter we work backwards from t_1 to say what must have happened at t_0. The way of making pre-/retro-dictions is by following (one way or the other) the putative chain of events implied by a theory. If the theoretical model leads us to same place as experience (actual or recorded) often enough, then we come to believe that the model reflects to some degree what actually happened. The use of retrodiction is,then, quite proper and my account can take note of this by allowing that checkability against experience can include being checked against reports of experience. The only problem introduced by this move is that of reliability of records. This is, of course, one of the central problems of history, but the fact that even agreement between independant reports doesn't guarantee truth doesn't undermine history irreparably. No amount of checking against experience can guarantee certainty, there always remains the possibility of error through illusion, delusion or hallucination etc. But such uncertainty doesn't make us despair of planning action simply because we often do act in accordance with beliefs about how things are and our actions usually lead to the

consequences our beliefs led us to expect. So although historians have more problems with their work than a physical scientist usually has with his we should realise that the differenceisn't one between problems and no problems, rather it is a difference in degree. If a scientist doubts the accuracy of an experimental report then, funds and time permitting, it is possible for him to duplicate, in relevant detail, the reported events (ie. do the experiment again). The historian deals with events which are non-reproducable and so must rely on corroboration between reports and also, when appropriate, archeological remains. But although the scientist has an easier task than the historian when it comes to supporting research conclusions there is still uncertainty about both sorts of accounts when we start to ask questions about how accurate they are as descriptions and explanations of how things are (or were).

It seems reasonable to say that if the expectations some theory leads us to have are fulfilled, if the eclipse occurs, if the artefacts are found or if a course of action undertaken turns out to have the expected consequences (etc), then we have some justification for believing that the model of the world built into the paradigm under which the theory was generated captures the way things are to some extent. The real problem is that we can't give any firm answer to the question, 'To what extent?' We can't answer this question because it seems to require us to know how things really are in the world first in order to compare the account built into a particular paradigm with the truth. And, of course, if we had a way of knowing how things really are, a way of achieving an absolutely and finally true account of the world, we wouldn't 'waste' our time doing science, etc.

So we must now ask whether a notion of progressiveness defined in terms of problem solving can really tell us

that one of two or more competing paradigms is better than the other(s) in a sense of better which has written into it the requirement that the best theory is that one which we are justified in judging to capture the nature of what is being dealt with most accurately. The first thing to mote is that if, by some accident, we happened to hit on the absolute truth about something or other, then anyone who knew and fully understood that truth would always be able to predict what was going to happen with respect to that something - there would never be any anomalies. Conversely, however, a lack of known anomalies to a theory doesn't mean we've arrived at absolute truth, it might equally mean that we've missed something or that we're looking in the wrong place. But it nevertheless seems likely that the less accurate an account of how things are is the more intractable problems it will generate.

What I am suggesting is that looking at paradigms in terms of their success as problem solvers is not merely a question of comparing numbers of problems solved or numbers of intractable problems left unsolved or rate of progress in a situation where what counts as a solution depends only on the demands made by adherents of that paradigm. Neither is what counts as a solution to be understood in absolutist terms, because if the only acceptable solution to a problem is that which reveals finally and irrevocably how things are in the world, then we have no way of knowing whether any specialist discipline has ever solved a problem, and, as Laudan remarks, it would seem unlikely that any discipline has ever 'solved' a problem in this (absolutist) sense. In the absence of a fully specified criteria for absolute truth, criteria we don't possess and seem unlikely ever to possess, the claim to have solved any descriptive/ explanatory problem is strictly non-evaluable. This is why Laudan attempted to dispense with reliance on any notion of truth in 'Progress and its Problems.'

What we need is a middle course between the relativism

of, 'If initiates agree that 'this' is a solution to 'that' problem, then it is a solution because that's what they mean by the word 'solution',' and the unhelpful absolutist stance of, 'If 'this' is a solution, then 'that's' how things really and truly (and completely) are.' It seems to me that the middle course must involve an awareness of the links between understanding and action, an admission of the role which understanding plays in our lives. The fact is that the question of whether someone has a good understanding of people (say) isn't just a theoretical question within the relevant disciplines, it is also a question of his success in handling people, predicting what particular people will do in particular circumstances and what their responses to particular actions of his will be. We can justifiably say of someone that he understands people well on evidence of his successful handling of people, we don't need tohear his theory. Indeed there is no problem about ascribing understanding or knowledge to someone whose consistent success in some endeavour cannot plausibly be put down to sheer luck but who can give no account at all, or only a weak, insufficient, account, of how he achieves what he achieves (I'll be saying more on this later.)

The specialist disciplines are concerned with establishing public modes of understanding/bodies of knowledge and as such must deal in explicit theory. But they are not closed, they are not merely elaborate games where, 'This is true' fulfills a similar function to 'checkmate' in chess. Any systematic discipline, if it claims to increase our understanding of some aspect of the world, must claim that adherence to its theories will make relevant aspects of the world more predictable and hence (where appropriate) more effectively handlable. If a discipline doesn't achieve this, either directly or (as in the case of some of the work done in the second order disciplines) indirectly, then surely we should begin to wonder about that discipline. If adherence to a theory led consistently to unexpected

results we would conclude that the model of the world with which it was associated was wrong, that the researcher(s) simply hadn't arrived at an understanding of what they claimed to have understood. And if a theory had no implications for our expectations of the world (in a wide sense taking in the natural, the social and the 'inner' affectiveness of people) or else was such that anything that happened fitted in with the theory, then we simply wouldn't know whether the theory was symptomatic of understanding or of phantasy. In the latter situation it would seem more rational to assume that the theory was phantastic, even though it might not be, simply on the grounds that it is better for a discipline to reject the truth than to accept phantasies that would subvert the entire endeavour.

The linking of the probable truth of the model built into a paradigm and its theories with the utility of particular theories in facilitating our handling of problematic phenomena does not leave me with a pragmatic theory of truth. The truth of a model is dependent on its accuracy in capturing relevent aspects of the world. Utility appears not as a criterion of truth, but as a way of supporting a contention that 'this' model is more true-to-the-world than 'that' one (this notion of one paradigm being truer-to-the-world than another will be looked at later). This is where Laudan's problem-based notion of the progressiveness of a paradigm is useful in evaluation. My contention is that although we cannot even begin to suggest a way of evaluating any one paradigms degree of'trueness-to-the-world' directly (because we lack any detailed criteria) Laudan has given us the means by which, given competing paradigms A and B in a particular problem-domain (and I will be saying more about the notion of a problem-domain in a later section) we can reasonably make an assertion of the sort, 'There is reason to believe that A is truer-to-the-world than B.' And this comparative evaluation is carried out in terms of the better paradigm leading to us having expectations about the world which are fulfilled, of its

facilitating our handling relevant aspects of the world more successfully, of avoiding those frustrations of our plans/actions/expectations to which adherence to a less good paradigm would lead.

In terms of the activities of initiates of the empirical disciplines checking a paradigm involves investigating all its implications, trying to produce theories under the paradigm which account for any (and every) type of occurrence which falls within the relevant problem-domain. For those disciplines a problem is solved when the problematic phenomenon is characterised by a theory and model which, when adhered to, allows successful prediction and/or handling. A partial solution would be an account which allowed successful handling/prediction in some areas but left other areas as anomalies. In such circumstances, it seems reasonable to suggest, Laudan's evaluation in terms of progressiveness would pin-point the better paradigm, allowing for the case where a new paradigm is adopted more because of its promise as a problem solver than because it has already solved more problems. This latter case doesn't undermine my account because it says no more than that we must occasionally take a risk if we are to improve our understanding. If a 'promising' paradigm suddenly turns out to be a basket of snakes we can always revert to the one we hoped it had replaced or else try a new one. The only difference between specialist and non-specialist attitudes to the relation between theory and action is that the non-specialist just wants a theory that will facilitate his activities whereas the specialist performs relevant action (makes observations, performs experiments etc.) precisely to discover whether what the theory implies does occur. In both cases the important point is that the theory has implications for our experience and although no finite number of corroborative experiences can prove a theory, anomalies, if they occur with respect to the relevant problem-core, can serve to make a paradigm unacceptable. We can accept

a number of peripheral anomalies simply because we have already accepted that, being human, our understanding is always uncertain to some degree.

The second order disciplines, as I have already said, deal with problems that often aren't empirical. But, as I also said, these problems must be problems in other areas if the second order disciplines are to be more than elaborate passtimes. It should be clear that these 'other areas' must be either empirical disciplines or everyday life as if the second order disciplines related only to one another then they would appear as nothing more than an elaborate compendium of inter-related games. Thus the second order disciplines must be at least indirectly checkable against experience in terms of the success or otherwise of first order theories constructed under the constraints imposed by second order findings as problem solvers in the relevant (empirical) problem domain. This inter-relatedness of first and second order disciplines is, again, something on which I will say more later.

I feel confident, then, in saying that a comparative evaluation of competing paradigms in a problem-domain in terms of Laudan's criterion of progressiveness is a way of discovering which of the paradigms best fits the phenomena being characterised. It is not absolutely certain, but it seems the rational course to take. I should once again stress that I am not advocating the idea that understanding is to be identified with having a model that facilitates prediction and (where appropriate) manipulation. This would be to postulate a conceptual link between understanding and prediction/manipulation. My contention is that this link is contingent, that if we understand something we should be able to handle it better than chance would allow. I am saying that the paradigm which allows us to predict/manipulate more successfully than its rivals is, as a matter of contingent fact, likely to capture those phenomena of which treats more completely.

The final objection I must consider here concerns the status of the phrase 'truer-to-the-world'. This seems to admit of degrees of truth and is likely to be objected to by those who would argue that a sentence like, "The atomic weight of hydrogen is one," is either true or false. I don't think that this is a serious problem, its solution depends on grasping that there are two senses in which we can take a statement to be true.

The first sense I wish to isolate is seen most easily by recalling my earlier suggestion that disciplines construct specialist language games. It should be noted that this is not a 'one discipline one language game' model, rather different areas in a discipline will establish related language games bearing a family resemblance with the resemblance extending to the language games of related disciplines. (This is why we must use historical criteria to do with the evolution of a discipline's institutions as the way to distinguish disciplines from one another, there just aren't any easy logical divides). Within a language game, 'S is true,' (S a statement) can be analysed as something like, "Under the rules for the use of language operant in this (linguistic) context, 'true' is the correct appraisal of S." Here, however, 'true' appears as no more than a move in a game, like 'check' in chess.

The second sense of true is one which says that, given someone (P) who utters S, "S is true," means, "Things are as P says they are." This is the sense of true which I denoted by use of the phrase, 'true-to-the-world,' and is problematic insofar as we have no clear way of deciding whether any statement (other than analytic statements) is really true in this sense.

It seems to me that, 'hydrogen has an atomic weight of one,' is true in the first sense, i.e. under the rules of the relevant language game, and that whilst we are not completely sure (and could, perhaps, never be)

that it is true in the second sense we have good reason to think that the paradigm which gives rise to that statement is the best characterisation we have of the relevent phenomena. So we have good reason to treat it as if it is true of the world. 'True,' in the first sense above, tells us about how language is used, but tells us nothing about the world. When used in the second sense 'true' is always an insufficiently supported claim, but insofar as we are using the best paradigm we've been able to come up with we know that the statements we have made are probably somewhere near the mark, at least nearer than any other statements we could make. In fact the way we use the appraisal 'true' suggests that we use it in the first sense, true under the rules of the language game, but only in cases where the language game is in use, i.e. where the model of the world it embodies is recognised as the most accurate of those available. We no longer, for instance, say that the statements made under phlogiston theory are true simply because we now have a better model of burning. Thus to say that, 'The atomic weight of hydrogen is one,' is true is to say two things, first that this is the correct thing to say in terms of the relevant specialist language game and secondly that the model of relevent phenomena which that language game embodies is, to the best of our knowledge, the most accurate one available. In other words, when we assent to the truth of specialist statements we are not asserting absolutely that things are as specified, we are instead saying that there is better reason for accepting that statement/theory/paradigm complex than any other in the relevent domain .

The use of the relation between understanding and action as a way of saying more about what should count as a solution to a problem and hence as a way of supporting a contention that 'this' is the best available paradigm in terms of capturing the nature of relevent phenomena more accurately than competing

paradigms may be questioned. In particular those who think that understanding is its own reward and that any contingent facts about the usefulness of theoretical understanding in action are theoretically irrelevent will be uneasy about my approach insofar as it leaves open questions about the value of the findings of specialist communities. What I have said so far leaves open the possibility that the value of specialist accounts accrues through the utility of such accounts in unrelated areas. This would be an instrumentalist view of systematic enquiry in the disciplines and the opponents of instrumentalism would want to argue that even if people do value, say, physics, instrumentally, they are wrong to do so, that physics leads to an understanding of the world and that this is what makes it valuable, not any further facts about the utility of that understanding.

In the next section I will be looking at the problems generated both by instrumentalist views of the disciplines and by the view of the systematic disciplines as being intrinsically worthwhile.

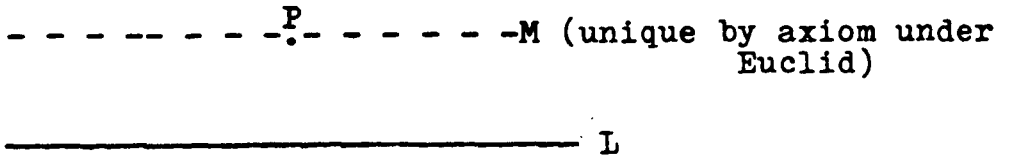
Intrinsically Worthwhile Activities.

The necessity for a chain of extrinsic value to end in intrinsic value is well known. If A is of value then it is either intrinsically valuable or its value derives from its connections with some B which itself must either be of intrinsic value or else derive its value through its links with some C. Unless this chain arrives at something which has value in itself and not through connections with something else then it just keeps on going and nothing can be shown to be of value. Thus nothing can be shown to be of value unless something is intrinsically valuable.

The idea that some areas of activity, notably the systematic disciplines, are intrinsically worthwhile arises largely from the difficulties which follow if we take an instrumentalist view of many important areas of thought. The strain of instrumentalism I'm interested in here is that which says that the value of theoretical activity derives ultimately from the theory's serving some logically unrelated purpose. So, an instrumentalist might say, the value of theoretical physics derives from the links between this theory and the activities of technologists whose activities are worthwhile because they have a direct impact (televisions, washing machines, motor cars etc.) on the quality of life. People value the machines which technologists design on the basis of more abstract theoretical work, therefore people should also value (extrinsically) the activities of theoretical physicists and the various sorts of engineer. This sounds very plausible at first glance, but instrumentalism has a number of serious drawbacks.

The most serious drawback of the view I've outlined is that it says, put crudely, if you want to evaluate a particular piece of theoretical work what you do is to investigate its implications for other areas - if there are no such implications, then the work is worthless. An example will show the danger of this position.

In Euclid's geometry there is an axiom which says that given a line L and a point P not on L, there is only one line (M) in the same plane as P and L which passes through P and doesn't meet L no matter how far the lines are extended.



Euclid was never very happy about this axiom as it made assertions about a state of affairs which, in principle, could not be inspected - both lines (by definition) can be extended indefinitely so no matter how far along them we inspect there will always be more of them we can't get at. Euclid actually avoided using this axiom, even at the expense of complicating some of his proofs, and his disquiet about it was vindicated in the eighteenth and nineteenth centuries when non-Euclidean geometries were generated. Two variations on Euclid's parallel line axiom turned out to give consistent geometries. Lobatchevsky and Bolyai worked with the idea that there must be at least two lines through P parallel with L and produced a consistent geometry which incorporated a proof that the angles of a triangle add up to less than 180°, the bigger the triangle the smaller the sum. Later Riemann adopted the notion that all lines are finite but endless (like the equator on a globe). In his geometry on the surface of a sphere, where 'lines' are great circles (circles with the same diameter and centre as the sphere), Riemann produced a geometry in which there are no parallel lines. Now neither of these geometries gives results which are significantly different from Euclid here on earth - the distances involved aren't large enough. So the non-Euclidean geometries don't have any immediately obvious practical implications in everyday situations. And throughout the nineteenth century they were seen as having precious few theoretical implications either - they were regarded as being mathematical

curiosities. Thus a nineteenth century instrumentalist would have had to dismiss them as being of at most doubtful value and probably as worthless puzzles except in terms of their being intriguing to mathematicians (which is not a criterion of value under instrumentalism).

It was not until Einstein realised that space was warpable by mass and that as space varies so does the geodesic (shortest path between two points in the space) that the non-Euclidean geometries came to have a demonstrable value. If space is variable, then the geometry which best describes it will not embody assumptions about what constitutes a geodesic, so Euclid's straight line and Riemann's endless but finite curves both were particular geodesics fitting particular spaces and neither was general enough. Einstein overcame Newton's problem with gravity by suggesting that (e.g.) the moon goes round the earth not because it is 'tied' to the earth by a 'string' of gravity, but because the earth's mass warps space in our immediate vicinity so that its geodesic is a closed curve around the earth. The moon, like all free bodies, falls along the geodesic of the space in which it finds itself, so the moon goes round the earth. In retrospect, then, we can see that the mathematical 'games' of the non-Euclidean geometers have turned out to be important elements in the development of modern physics even if they had to wait a considerable time for their importance to be seen.

Now it might be claimed that in showing instrumentalism is inadequate as a way of evaluating current research I have not really shown its inadequacy as a theory of value for theoretical activity. An instrumentalist might reply to my objections by saying that any theory can be judged to be of value only if, in principle, it has practical implications beyond the theoretical context in which it is generated. This, unfortunately, errs in the direction of liberalism as opposed to the errors of extreme conservatism which strict instrumentalism is heir to. There can be very little theoretical work

that could not conceivably serve some ulterior purpose, so under this new conception of instrumentalism just about everything is of value. The new instrumentalist notion of value is so all-inclusive as to be useless.

If instrumentalism has problems with the sciences it is incapable of saying anything plausible about the arts. The value of a painting or piece of music can hardly be a matter of how much money the artist in question makes. Best sellers in all areas have a tendency to fade rapidly once popular fashion has moved on. This seems to have been as true for the various styles of dance which the Elizabethan's flirted with as for the victorian authors who outsold Dickens as for the music that gets into the hit parade today. The idea that all art must derive its value from fulfilling a role like (e.g.) that of entertainment is the idea that art is no more than a saleable commodity, the best art being that which sells, and this is not something that can be agreed with given the problems which an artist like Van Gogh or a musician like Beethoven had to face when they insisted upon producing what the modern record company executive would describe as 'unsaleable product'. For a great many artists the value of what they do seems to derive from a very personal commitment, from a feeling that there is something that needs exploring or an attitude to something that needs expressing. The real value of something like Ligetti's 'Requiem for the dead of our Time', dedicated to the dead of Hiroshima and Nagasaki, is surely to be estimated in terms of Ligetti's personal success in expressing his feelings of horror at the effects of the atomic bomb and not in terms of cash (even though, as a saleable commodity, it has a cash value.)

The important failure of instrumentalism is its insistence that value only accrues to activities that serve a logically unrelated purpose. An artist's expressive purposes are logically related to the activities which serve them. When a jazz musician plays a solo the instrument is not accidental to the expression, the musician chooses the instrument and

explores it, develops a vocabulary which is used in expressing whatever the musician has to say. Similarly a composer chooses what instrument is to play what, not out of whim but out of the feeling that the sonorities of 'this' instrument are needed in 'this passage. People often learn to play musical instruments or how to paint in oils/carve wood/ sculpt stone because they feel that 'this' medium will give them the expressive possibilities they want. The medium is not accidental to the expression, if it were then words would serve our purpose, there would be no need to spend time mastering new techniques. The only reason for using musical instruments or paints or any of the vast number of artistic media is that different modes of expression open up different possibilities, and make it possible to express different things. What I am driving at is that when we isolate the expressive purposes of an artist (and I'm not saying that these are artists only purposes) we cannot use a model which says that the artist has feelings about something which he then tries to express using the media at his command. On this model the manipulation of the medium could plausibly be represented as an activity extrinsically motivated by the desire to express some feeling or attitude. But this isn't how things are, an artist's relationship to his chosen medium are much more complex. He has feelings both about the world beyond his medium of expression and about the medium itself. Sometimes, particularly in music, the artist's expression is of his feelings about the medium itself whilst at the other extreme, for instance in some of Brecht's plays, the medium is strictly subservient to the artist's desire to say something about the world. It seems very clear that a great deal of art cannot be shown to have extrinsic value. The artist's manipulation of his chosen medium to express something often cannot be represented as an activity which serves any purpose beyond that of using the medium to express something which the particular artist could only express in 'this' medium - if this isn't a worthwhile activity in itself then it

seems likely that it cannot be represented as valuable in any other way.

So, if instrumentalism can't give us any useful way of evaluating either the activities of scientists or of artists it would seem that we have a choice between concluding that such activities are worthless (except where there is a clear case for extrinsic value) or trying to establish that they are intrinsically worthwhile. I believe, however, that in at least one major attempt to follow the latter course (that of R.S. Peters in 'Ethics and Education') more has been written into the notion of intrinsic worthwhileness than should have been. I will try to explain what I mean. On p.146 of Ethics and Education Peters wrote:

> "...if we spend years trying to get children going on science, art and history and they return after our efforts, to bingo, billiards and eating bananas, do we say that this shows that these activities are not worthwhile. Don't we rather say that there is something wrong with our teaching methods or that the children have been immunised against education before they came to us? In other words for some reason or other they have not come to grasp what there is in these activities?"

and later on the same page:

> "...if a man does not pursue or at least feel drawn towards what is good then he does not really understand it; for the activities in question all have some general point which must be sensed by their participants and they all have standards of correctness and style built into them which gives rise to characteristic appraisals."

Both of these quotes are persuasive, they assert that the systematic disciplines are worthwhile and that failure to grasp this fact is a failure to understand them. The second quote talks about disciplines each having a 'general point' which is sensed by initiates. In the terminology I have been using Peters

seems to be saying here that the systematic disciplines do have basic problems, the general point of a discipline consisting in a committment to the solution of those problems, but that these problems are not the sort of things that can be explained to a lay man, or even (perhaps) explained at all. Rather the fundamental problem solving purposes of a discipline are internal to it, are sensed and grasped as the discipline is understood. So the worthwhileness of the systematic disciplines derives from each discipline having a general point which cannot be explained to a layman but which is sensed by the initiate. The only way to get a layman to see the value of (say) mathematics on this view is to teach him maths and hope that he manages to reach an adequate understanding of the discipline - adequate in terms of allowing him to see the value of the activity. A corollary of this argument (which is developed by Peters throughout ch.5 of Ethics and Education) is that anyone who can't see the value of maths thereby reveals a lack of understanding of the subject. This is a serious defect in Peters' whole argument , if you understand a theoretical activity you grasp both its point and its value, if you don't see its point and value, then you don't understand it. This sort of argument has become well known since the publishing of Catch-22.

The way Peters uses the terms, extrinsic value means value which accrues to some activity because it is instrumental in bringing about some state of affairs which is of value. Intrinsic value, however, seems to end up meaning something more than valuabe-for-its-own-sake. When Peters talks about theoretical activities being intrinsically worthwhile he seems to make such activities into arcane mysteries which have, ultimately, to be understood as much through intuition as through the exercise of the intellect. This tendency is what leads me away from Peters position - if there is no guarantee that physics is valuable beyond the collective

intuition of physicists then there is no guarantee. Intuition gives no criteria for the value of a systematic discipline other than that of consensus amongst initiates but initiates are committed, tied to their discipline in many ways including emotionally and economically - can we really accept their assurances? And what if the national tiddly-winks society asserts the worth-whileness of the activities they engage in and reply to those who doubt the intrinsic worthwhileness of the noble art of tiddly-winks by accusing them of failing to understand the game, of failing to sense the general point which underlies tiddly-winks and gives it its value? Intuitionist arguments just go too far, there's no reply to them because of the catch-22 implication that anyone who disagrees lacks understanding, they make an unsupported assertion and then stop people questioning it by what comes down to a dirty trick in the tradition of the worst sort of political rhetoric.

It seems to me that the value of any systematic discipline, any theoretical activity, must derive from the importance of its basic problems. In saying this I am not disagreeing with Peters in very much except terminology - he must, I think, agree that the 'general point' of a theoretical activity is what gives the activity its general value (ie. its value beyond the value to the individual which may derive from that persons enjoyment etc. of the activity). Where I strongly disagree with Peters is on the question of whether the basic problems of a discipline are comprehensively statable in ordinary language. For Peters the disciplines are closed, incomprehensible to any but initiates. This, incidentally, really does leave the process of initiation looking very mysterious. For me the language games of the specialist disciplines 'run into' those of ordinary language and basic problems constitute a nexus. The basic problems must be comprehensible from the point of view of ordinary language - otherwise there would be no reason for the formulation of the specialist language games.

It is obvious that certain higher level problems, for instance that of giving calculus a basis in logic, cannot properly be understood by a layman. But these higher order problems are generated in the attempt to solve more basic problems (like describing and explaining motion) and it is these basic problems which, as I have argued, give the discipline direction and serve to give a rational basis for paradigm evaluation. It is these sorts of problems, basic problems central to disciplines at particular points in time, that must be statable in ordinary language - if they were not then rational discussion of which paradigm a discipline should adopt could not take place as people recommending different paradigms would unavoidably be thinking and talking in terms of different concepts and misunderstanding would result. This, as I have already observed, is not how things are, which suggests that discussion of problems can be carried out in terms not tied to particular alternative paradigms within a discipline. In other words as irrationality and total relativism do not rule as a matter of logical necessity, the basic problems of any discipline <u>are</u> comprehensively discussable in terms not tied to a particular way of looking within a discipline. So the general point of any theoretical activity must be explainable to a layman, otherwise the activity cannot establish that it has a point or that it is a rationally organised activity.

Peters attempts to support the contention that theoretical activities are intrinsically worthwhile by suggesting that anyone who seriously asks the question 'Why do this rather than that?' is thereby committed to those activities. This, Peters claims, must be so because theoretical activities are geared precisely to answer that question. Anyone who asks, 'Why do this rather than that?' seriously must (if he <u>is</u> serious) be looking for answers, and the theoretical activities are the ways to get answers, so anyone asking the question seriously must value those activities.

The central problem with this argument seems to arise from the fact that, 'Why do this rather than that?' can be interpreted in a number of ways. Within a systematic discipline it can be a question about which paradigm to adopt, what purposes the discipline should have or which of two competing theories does the job best. In an everyday context the question can be about the best way to do a job, 'Why this way rather then that way?' and can be answered by reference to theory, in this case the value of the theory seems to derive from its usefulness in allowing some job to be done more efficiently - the theory is seen as valuable because it indicates that some valued end is more likely to be achieved by doing 'this' than by doing 'that.' I think that this must constitute a serious problem for the view which Peters forwarded in Ethics and Education although for me, given my emphasis on the idea that basic problems of a discipline must be comprehensible in ordinary language, a situation such as the one described can be used to show the intrinsic worthwhileness of the theory if the everyday problems being dealt with and the basic problems being dealt with by the relevent theory are logically related - I will say more about this later.

Peters' question can also be asked as a way of asking what sorts of theoretical activity we should engage in and this is the level at which it comes closest to doing what he wants it to do. If it was the case that the 'general point' of a discipline (and hence its value) could only be sensed by initiates and not explained to laymen then, 'Why do this rather than that?' would be an unanswerable question - the only way to answer a layman asking the question of, say, a philosopher would be to say that if he were to become an initiate and acquire an understanding of the subject he would come to see why he should do it rather than, say, origami. But if this was how things are then the idea that we can discuss a discipline's problems/progressiveness rationally, or choose paradigms on a rational basis,

would be incoherent. In order to make his argument for the intrinsic worthwhileness of theoretical activities work Peters needs the intuitionism against which I have already argued - thus the argument fails.

The problem with intrinsic worthwhileness is that we are often unsure what we mean when we talk about it. If every pure mathematician engages with his subject out of nothing more than a love of doing pure maths, then all pure mathematicians are intrinsically motivated. This means that from the point of view of pure mathematicians their subject is seen as intrinsically worthwhile, but such a fact, (supposing it to be a fact for the sake of this example) does nothing to establish the contention that everybody should regard pure maths as intrinsically worthwhile. The fact is that if people in general happen to regard some activity as intrinsically worthwhile then, in one sense, it is intrinsically worthwhile, irrespective of the reasons why people see it as such. But philosophers want a stronger notion of intrinsic worthwhileness under which no activity is regarded as intrinsically worthwhile unless there are good reasons for saying that people should so regard it. It is this stronger notion that brings difficulties because it seems to require us to go beyond the empirical fact that people, just do value certain things for their own sakes and to start looking for a general theory of value, which, a priori, tells us what we should value. As far as I can make out we have no such general theory, this is why Peters used a transcendental argument in chapter 5 of Ethics and Education, and his failure leaves us in a position where we must either look for a general theory of value or else accept that value judgements are made by people and that they can often be made on a piecemeal basis, people deciding rationally within a specific context that 'this' is valuable in itself. In the absence of a general theory of value such piecemealism, prone to error though it may be, is the only rational course. My belief is that just as democracy manages to look like a good form of government mainly because other forms

seem to rest on questionable views of what constitutes the good life, the making of value judgements by a process of arriving at concensus through rational discussion is the best means we have of deciding what is or is not intrinsically worthwhile largely because the general theories of value we have really aren't very good, they all have serious internal problems.

On the subject of the value of theoretical activity it seems to me that the value of any systematic discipline must derive from the relations which hold between the basic problems which the discipline seeks to solve and the everyday problems which people in general find to be important. What I am saying is that if there are everyday problems which people find important, for instance growing better crops so that people can be fed, and if there are areas of theoretical activity (genetics, soil mechanics etc.) which are geared to solving those problems, then people should regard those theoretical activities as being worthwhile. And if the links between the problems dealt with by the theoretical activity (eg discovering general rules for the improvement of crops) and the everyday problems (eg. growing better crops) are logical, then the theoretical activities should be regarded as intrinsically worthwhile.

It may be, though, that the problem of growing better crops is only seen as important because of the contingent link between the availability of food and keeping people alive, and that this latter purpose is seen as intrinsically worthwhile, in which case the value of agricultural theory may derive extrinsically - this doesn't seem important to me, if an area of theoretical activity is valuable it is valuable, whether the value is extrinsic or intrinsic doesn't strike me as crucial.

There are difficulties here that need to be examined. Firstly we must talk about problems here and not activities in order to achieve generality and escape from

a problem created by a psychological fact about human beings. A perfectly acceptable purpose for individuals in life is the achievement of a measure of enjoyment. Some people derive a great deal of pleasure from pottering about in their gardens or playing cricket or doing crossword puzzles. And often, for particular individuals, the pleasure derives from engaging in an activity even if they're not much good at it. In some cases it is even the case that people don't want to get too involved with theory or systematisation because a rigorous approach to the activity would (they believe) detract from the pleasure.Such people are not concerned with basic problems of the area of activity with which they are involved, they simply find the activity relaxing/enjoyable and the fact that the particular activities in which they engage aren't particularly efficient in achieving the ends they serve is irrelevent. I would describe such people as hobbyists or potterers, for them the purpose served by their activities are enjoyment and/or relaxation and any other purposes which are also carried out are of secondary importance.

The observation to be made about this sort of attitude is that the purpose of achieving enjoyment is one which is served by different activities for different people. Different people derive pleasure from different activities, some from playing tiddly-winks, others from engaging with the problems of pure mathematics. The personal nature of a judgement like, 'This is an enjoyable activity,' makes it an unsuitable candidate as a criterion of general value. So the fact that philosophers tend to enjoy engaging in philosophical discussion cannot be used as a way of suggesting that philosophy is valuable in the sense that everyone should value it. Conversly, I suggest, the establishment of the truth of a proposition like 'philosophy is a valuable area of activity' does nothing to establish that everyone should enjoy philosophical discussion. It is, I suggest, an empirical fact that people tend to be better at things they enjoy, simply because they are more likely to spend

time working at it and thus to achieve a better understanding of it, but this isn't always the case, people can'potter' in an area for years just for fun without ever engaging seriously with its basic problems.

This brings up the subject of the links between emotional commitment and understanding. It is often said that no-one really understands an area of theoretical activity unless he is emotionally committed to it. In ch.5 of Ethics and Education Peters wrote:

> 'Could a man really understand science, for instance who was unmoved for the passion for truth and concern about evidence and clarity. What sort of mathematician would a man be who cared nothing for neatness or elegance of proof? And could a man begin to understand what philosophy was if he welcomed contradictions, delighted in obscurity and thought cogency in argument a bourgeois fad?'

Again Peters is very persuasive here, but I would argue that he has made the mistake of taking a contingent fact, that those with an emotional commi tment are more likely to do well than those who lack such motivation, and has elevated it to the level of conceptual fact, that those who lack committment don't, as a matter of logic, understand. We've already been over this area, the tying together of understanding with emotional committment is part of the intuitionism which is a keystone of ch.5 of Ethics and Education - if someone isn't committed emotionally his understanding is impugned Against this sort of argument I would observe that too much emotional commit ment can lead those with power within the relevent institutions to ride roughshod over the demands for public demonstration which maintain a discipline's objectivity. It would be odd if, in general, philosophers or physicists weren't emotionally committed to their work, but this committment is personal, it is irrelevent to the general value of their work, it has no place in any argument designed to show that people in general should value what phiolosophers or physicists

do. I would further suggest that the idea of understanding without emotional commitment is an important one. When evaluating the ideas of mechanism earlier in this thesis I admitted that, personally, I have an aversion to the idea that people can be fully explained in purely extensional terms. But this psychological fact about me is irrelevant to the question of whether my arguments do, in fact, demonstrate the incompleteness of mechanistic accounts. I would further suggest that commitment to clarity and cogency in thought in philosophy is something which recommends itself largely because that is the only way in which philosophers can establish pubicly accessible ways of talking about issues which are of general importance in human life. Assertions about the state of an individual philosopher's emotions, or all philosophers' emotions, do nothing at all to establish that lucidity and rational argument are of value.

What I am saying is that questions about the intrinsic worthwhileness of an area of theoretical activity cannot be answered by pointing out that many people are intrinsically motivated to engage with it. It seems clear to me that people engage in many activities simply for the sake of doing them but that they wouldn't want to say that everyone should be emotionally committed to them. Golfers, musicians, footballers and philosophers will all enthuse about their areas of activity but will usually admit that 'this' is not everyone's cup of tea. Conversely, whilst accepting that many people can't be expected to enjoy doing philosophy, I would suggest that philosophy is valuable in that viewing a wide range of other activities from a philosophical perspective can cast light on problems which are real but are often perceived only dimly. I would expect even those who find philosophy tedious to admit the importance of the subject and suggest that even if someone was not intrinsically motivated to engage in philosophical discourse he could achieve some understanding of issues relevant to areas of activity he did find interesting

in themselves if he became aware of the links between philosophy and those areas. I see no reason to doubt that it would be logically possible for someone who was entirely extrinsically motivated to achieve an understanding of philosophy although, as I said earlier, I can accept that, as a matter of contingent fact, it is unlikely that this would happen. If something is intrinsically worthwhile then everyone should regard it as being of general value, but this is not to say that everyone should be intrinsically motivated to engage with it. It seems to me that there is a gap between asserting, on rational reflection, that 'this' is worthwhile and being intrinsically motivated. The difference is that someone who is intrinsically motivated is emotionally committed, but the emotionally commi tment is often a very personal thing and, as I have argued, is therefore irrelevant to the more important question of intrinsic worthwhileness in a general sense.

The second problem which arises from suggesting that the value of theoretical activity may derive from the links between the problems which such activity is geared to solve and the problems which people regard as important comes from the fact that people regard all sorts of things as important and for a wide variety of reasons, many of which are questionable in the extreme. Thus the fact that the basic problems of a particular discipline are logically related to everyday problems which people see as important does nothing to establish intrinsic worthwhileness in the strong sense. The establishment of intrinsic worthwhileness in the sense of 'this' being a discipline which people should value must depend upon the basic problems of the discipline being logically related to everyday problems which not only are seen as important but which people are justified in judging to be important.

This seems once again to bring us up against the need for that elusive entity the general theory of value.

But, I suggest, we can survive in the absence of such a theory by adopting a policy of rational piecemealism. Such a policy involves leaving aside the quest for a general theory of value and instead accepting what people do, as a matter of contingent fact, value as being valuable provided that there are no good arguments to the effect that the general consensus, on 'this' particular question of value, is wrong.

Such piecemealism will be attacked by some philosophers as being an abrogation of a central task of philosophy. I, on the other hand, tend towards the belief that the problem of specifying a general and a priori theory of value is one that has been pursued fruitlessly for so long that the rational course is to set it aside and instead regard questions of value as being essentially questions about what sort of value system people want. The need for an internally consistent system of values is clear, but the question of which values should be taken as fundamental seems to me to be best interpreted as a question about what sorts of life people want to lead rather than about what is 'really' valuable in the light of eternity.

I wish to argue in favour of this sort of rational piecemealism for theoretical activities in general. What I want to say is that it doesn't help at all to look for ways of supporting value claims which deal only with the internal characteristics of disciplines. I want to represent success in the systematic disciplines as consisting in getting closer than before to how things are, as evinced by a new theory being more useful than previous theories in facilitating our handling of relevant aspects of the world. Thus I want to represent the physical sciences as constructing a succession of ways of looking which show a progressively better fit to the world in terms of providing solutions to basic problems, both problem and solution being identifiable in theoretical contexts (i.e. the solution satisfies the formal constraints) and in non-specialist

contexts (i.e. the problem is 'real' beyond the specialist context and the solution has practical implications for dealing with the problem). Insofar as we regard protecting ourselves from the vagaries of nature as important, and insofar as the basic problems of the physical sciences are logically related to the everyday problems we seek to deal with, it seems to me that we should regard the physical sciences as intrinsically worthwhile. (Although, as I remarked earlier, the importance of intrinsic worthwhileness has been, in my opinion, over emphasised, due largely to the weight Peters put on it in 'Ethics and Education' - the intrinsic/extrinsic distinction is, in fact, very crude as later remarks will indicate).

The problems which remain for my account lie in areas which might be dubbed absolutist, although not necessarily in the sense of absolutism (aiming to say how things 'really and truly' are) I have used so far. I include in this extended notion of absolutism the Kantian notion of logically necessary categories of cognition even though these are seen as basic to human understanding and not necessarily revelatory of ultimate truth. There is some confusion here as Kant thought of space as a logically necessary category and of Euclid as a necessarily true description of space, thus there seems to be a confusion here as to whether Kant was indeed doing descriptive metaphysics in Strawson's sense of, "Aiming to lay bare the most general features of our conceptual Structure, (on P.9 of 'Individuals') or whether this descriptive part of Kantian metaphysics was seen by Kant and his followers as a way of working towards a basic set of ontological categories i.e. of finding out how things really are, not merely finding out how human beings say things are.

I will be looking in my next section at a series of claims about constraints on theoretical activity, constraints said to have a priority over other demands made on theory. I will be looking not only at Kantian claims, but also

claims about logic and about what (in principle) does or does not make sense. The shared feature of all these claims is that they make a priori judgements about what conditions a theory must satisfy in order to be acceptable which (it is claimed) must be fulfilled by <u>any</u> theory in <u>any</u> area. I will, in general, be discussing claims to the effect that systematic enquiry using Laudan's criteria of progressiveness is inadequate as a way of pursuing understanding.

Absolutism.

My account so far has represented theoretical understanding as consisting in the model/paradigm/theory complexes generated by specialist communities engaging with only certain limited areas of problems. This piecemealism, with different disciplines or families of disciplines, being concerned with different problem-domains (a notion to be elucidated in a later section) is what will allow me to suggest (again later) that disciplines working in different problem-domains may well find it necessary to formulate different (although not necessarily logically distinct in any clear-cut way) specialist language games/ways of looking.

One objection to my approach so far would be to assert that really there is only one problem underlying all our attempts at understanding, which is the problem of saying how things are in the world. Someone of a more classical outlook might be unwilling to accept the uncertainty which is part of the account I have given. My task in this section is to look at some programmes which have been represented as better routes to understanding than the route I have mapped so far. These 'alternative routes' vary from the mystics' non-theoretical preparation for revelation through Kant's logically necessary categories of cognition to related attempts by logicians to assert unquestionable truths and even to attempts to specify a logically necessary (and therefore existent) Absolute, a unity of which all particulars are merely aspects. I will argue that such absolutist programmes are misleading, that any claims they make about leading to the acquisition of understanding are simply not justified.

The absolutist camp, in the all-embracing sense of 'absolutism' I will adopt here, includes anyone who thinks that they have a way of discovering absolute truth, the way things really are, or else (at the formal level) truths which are simply unassailable and thus

should be accepted universally. I earlier called Popper an absolutist and in the sense that he sees science as zeroing-in, by successive approximation, on absolute truth, he can be called absolutist. But Popper's variety of absolutism explicitly denies that we could ever know that we'd arrived at absolute truth even if we had, in fact, achieved it. This is not the sort of absolutism I'm interested in here, I've already dealt with the sorts of problem Popper was concerned with in earlier discussion and, despite the fact that my account of progress differs from Popper's, I have agreed with him that progress is towards the truth. In this section I am concerned with claims about what the (absolute) truth is or how we can (knowingly) arrive at it.

The issues to be discussed here are not concerned with (e.g.) questions about the status of the findings of the empirical disciplines, Rather they are concerned with questions about how we could possibly go about discovering absolute truth. Since the modes of enquiry used by the empirical disciplines result, as we have seen, in a measure of uncertainty they are not what concern me here. I am interested in this section in much stronger claims, claims about how certainty can be achieved. The question of whether there is anything compelling in any strongly absolutist claim about truth or the way of truth is not empirical, it is a philosophical question which must be answered by looking at the various sorts of claim that might be made and seeing if they are tenable.

I will begin by looking at claims made by members of religious/mystical communities who claim to find truth through faith. To such communities truth is attainable only through personal experience and the search for truth is a matter of each person preparing himself for revelation. I can't spend too much time discussing the revelatory claims of mystics. That the accounts given are related to actual experience I do

not doubt, but that those experiences are more than illusion/delusion is something which, because of the nature of mysticism, seems publicly undemonstrable. It seems clear that religious statements are properly to be seen as assertions of faith and that much religious activity is expression of faith. But that such faith is based on anything more than can be explained in terms of sociology and/or psychology is a difficult proposition to support.

Nevertheless I find it difficult to dismiss religious forms of life as being nothing more than expressive. Consider the example of a research scientist who has a hunch, follows it up, discovers that it was right and publishes his work to international acclaim. Now it is tempting to represent the hunch as nothing more than the creation of an informed imagination, properly to be regarded as a working hypothesis, neither believed nor disbelieved, until such time as it had been subjected to the appropriate tests for truth. And even if a particular scientist seemed always to get the right hunches we might insist on saying that until he tested his hunch he only had a hypothesis and, perhaps, a belief which (again perhaps) only arises out of self confidence, but certainly not knowledge.

What I want to suggest is that we may be wrong about this. A researcher may actually know something before he gives a publicly acceptable demonstration of his knowledge. If, for instance, we accept a causal theory of knowledge in which 'P knows that S' (P a person, S a statement) is said to be true if, and only if, there is a state of affairs Q, specified by S, which stands in a causal (in some sense) relationship to P such that P's tendency to assert or acquiesce to S or some logically related statement is the result of the causal relation which obtains between P and Q, then we have a possibility of P knowing that S not only before he demonstrates the truth of S, but even if he cannot give such a publicly acceptable demonstration.

There are a great many problems here I cannot deal with, but I think that it is at least clear that we cannot assert categorically that a knowledge claim which isn't backed up by public demonstration cannot still result from knowledge. What is the case is that there are good reasons for refusing to accept unsupported knowledge claims. This is why I believe that we should not accept the revelatory claims of mystics as true and that we should nevertheless hold back from asserting them to be the product of feverish imagination.

Mystics may know, but they cannot demonstrate the truth of their knowledge claims in any way that can give us a rational basis for accepting them - perhaps this realisation is what leads the Zen masters to talk in riddles, seeking to challenge the novice into achieving knowledge for himself rather than attempting to pass on what they cannot justify passing on. It should also be noted that the mystics' inability to publicly support his knowledge claims means also that whilst he may in fact know 'this' or 'that' he cannot know that he knows, cannot be sure that what he believes is knowledge rather than the product of self delusion. So perhaps it would be proper to suggest that the silent mystic is the wisest of all.

Given that the mystical path to enlightenment seems of little use to those who are interested in establishing public bodies of knowledge an absolutist might adopt an alternative course, that of trying to specify an Absolute through metaphysical argument. The theistic absolutists tend to suffer greatly at the hands of those metaphysicians to whom the gulf between creator and created makes the idea of a personalized God appear as a rather poor kind of Absolute. This is because some metaphysician-absolutists see an Absolute as a unity, a whole of which the particulars of everyday life are only parts. There can be nothing apart from this sort of Absolute, nothing that is other, because, by definition,

it subsumes everything. So a personalised God who is distinct from His creation doesn't qualify as an Absolute from at least one metaphysical standpoint.

The question that must arise at this point concerns the status of this sort of Absolute - is it anything more than a metaphysicians dream? The answer is that we don't know. What is the case (metaphysicians tell us) is that if we managed to specify an Absolute which is logically necessary and complete, then it necessarily exists and hence we would have specified how things are 'in the light of eternity'. All particulars, all values, everything (including ourselves) would be shown to be aspects of the one-ness, the Absolute, which we had specified. What is also the case is that we have no such specification. This being the case the next question must be about why the idea of specifying an Absolute seems so compelling to some people.

Apart from the undeniable fact that a full specification of an Absolute (assuming that things are as unified as some absolutists claim) would be very nice to have, the central bastion of absolutism is the fact that it makes no sense to deny an absolute, for to do so amounts to asserting an absolute. The assertion that it is absolutely true that there are no absolutes is self contradictory. On p.20 of his book 'Ascent to the Absolute' J.N. Findlay writes:

> 'To be content to do the immediate thought-task on hand, and to limit one's analysis to what is immediately a part of it, may be said to be the intellectual policy of non-absolutism, I shall not call it anti-absolutism. It is certainly a defensible stance, and one that one will have to fall back on if all one's absolutist ventures prove abortive....(But) There is in such piecemealism often a faith, sometimes messianically promulgated, in a pluralism of disjecta membra thrown together in defiance of sense and order, in a flat disconnection of our hermeneutic demands and the material standing before us for interpretation, in an ill-ordered infinity of supposedly logical possibilities. All these doctrines are not humble confessions of ignorance

> and impotence to prove: they are arrogant assertions of knowledge and of boundless power to liquidate the efforts of constructive understanding. They are absolutist assertions which show their absolutist character by their unwillingness to be considered alongside of other better constructed less self-destroying, more arguable absolutisms.'

So the denial of the possibility of specifying an Absolute can become nothing more than the assertion of a very poor candidate for Absolute-ship. But there is no problem in choosing to assert no absolute, in deciding, in the face of the absolutist's continuing failure to specify an Absolute to follow a course of what might be called rational piecemealism. The important fact about an Absolute is that <u>if</u> it is a possibility <u>then</u> it makes no sense to deny it. But we cannot merely assert its possibility - Findlay writes: (p.24):

> 'The only way, in fact, to see its possibility is to see its necessity, and this excludes the tempting argumentative coup de tonnerre from its mere conceivability to its full reality... An Absolute must be given an essential content, other than its mere necessity of existence, before we can determine whether it makes sense, and whether it alone can make sense, to conceive of <u>it</u> as necessarily existent.'

So in the absence of a full specification of an Absolute it still makes sense to doubt whether such a specification will ever be achieved and hence to opt for what Findlay calls 'non-absolutism' which is the same policy I have designated 'rational piecemealism.'

Thus a question mark remains over the sort of project Findlay talks about in 'Ascent to the Absolute'. There is no strong reason to take up this 'path to understanding' simply because we don't know whether doing this sort of metaphysics is likely to get us anywhere or not. Findlay himself recognises this and makes it clear that failure is a possibility (and a very real one) in this sort of endeavour. In his book Findlay doesn't

claim to have got anywhere near specifying an Absolute in adequate detail; he concerns himself with the problem of what sort of demands must be made on any account which claims to specify an Absolute, and in this he would certainly claim to have done little more than open the investigation. I have little quarrel with absolutism of the kind with which Findlay engages, except to say that I doubt whether it will prove fruitful. The history of this sort of endeavour is very long and has a strong smell of failure about it. I wouldn't even attempt to say that, in principle, attempts like Findlay's are doomed to a Quixotic fate, bound to end in failure despite the noble intentions which motivate them (to do this would be to deny an absolute). But I must say that even a superficial comparison of this sort of approach with a more empirical approach, in terms of problem solving, practical utility or any other criteria, makes me believe that the rational course is to continue with empirical research and to leave the more grandoise but less promising metaphysical programme to one side.

This, nevertheless, leaves plenty of scope for those who want to shift ground somewhat and make claims not so much about the nature of the world in general, but rather about human nature and in particular about human cognition. This strain of absolutism claims not that 'this' is how the world is, but that 'this' is how the human mind is. The programme here is to use descriptive metaphysics to 'dig out' logically primitive concepts (like 'cause', 'person' etc.) in an attempt to discover which aspects of our understanding we just couldn't do without. This is the Kantian tradition and, as I remarked earlier, it seems unclear (to me at least) how Kant himself saw the relationship between logically necessary categories of cognition and ontological categories, the relationship between how we say things are and how they really are (although my earlier example of space makes it seem likely that

the distinction was a little blurred in places). I will look more closely at the notion that time and space are logically necessary categories of cognition.

One way to deal with the assertion that time and space are in some sense absolutes would be to evoke Findlay's point that we cannot merely assert this, that we must specify what we mean by time and space and show that 'these' specific concepts of time and space are logically necessary categories of cognition. The problem here is that our concepts of time and space are still in a state of flux. Kant saw time as a constant and space as Euclidean. That space isn't necessarily Euclidean has been known for around two hundred years now, and since Einstein we have known that time is a variable. It is further the case that the discovery of black holes in the universe has led physicists to start questioning the distinctness of time, space and matter. The gravitational forces in a black hole are so great that light cannot escape from it, matter is compressed to infinitesimal volume and time is at a standstill. This compression of the space/time continuum is so great that some physicists are beginning to wonder whether an explanation of what happens in a black hole can be given in terms of space time and matter if these are viewed as distinct. This is why some theoretical physicists are considering the possibility of a new idea, that of a twister, which is more fundamental than notions like time, space or matter. Such a change in the basic concepts of physics would herald a new physics as different from Einstein's as his was from Newton's. It seems to me that given the way physics seems to keep moving on the desire of some philosophers to assert that 'this' or 'that' concept of space or time is an absolute seems to smack of extreme imprudence. I would further suggest that the fact that some physicists seem to be working towards a notion which is logically more primitive than notions of time, space and matter should warn us

not to assert them as absolutes even though, as a matter of contingent fact, they do happen, at this point in time, to be basic to our way of looking. The fact that we do lean very heavily on the notions of space, time and matter in our modes of understanding does nothing to establish that things could not be otherwise. If the theoretical physicists who are investigating the notion of a 'twister' are on the right track, then, for physics at least, things will become otherwise in a few years time.

In general I want to suggest that equating logically necessary categories of cognition with absolute categories, with concepts that necessarily reveal reality truly, must be wrong. The only way to establish 'this' or 'that' notion as logically necessary is to show that it is a logical 'keystone' of at least some of our ways of looking. And the method by which we could show some notion to occupy this sort of position with respect to our ways of looking is, as I have said, that of descriptive metaphysics. This involves taking statements which seem undeniably true (for instance that babies are born without linguistic skills and acquire them later, or that a person has both physical and mental attributes) and working backwards to deduce what else we should say given that we acquiesce to the statements from which we started. But this approach could be seen as a way of sorting out the inconsistencies in our ways of looking rather than as a means of revealing absolutes, and would, I suggest, be better seen that way. My point is that the fact that any particular concept is one which <u>we</u> can not do without does not say anything about the nature of reality in an absolutist sense, it tells us only about ourselves and the ways of looking we use. And, further, to simply identify the logically primitive concepts which we currently, as a matter of contingent fact, cannot do without doesn't establish anything about whether (in principle) thing could be otherwise or not. What we can

make sense of or not doesn't seem amenable to a priori demarcation.

If we see the establishment of different ways of looking as non-absolutist endeavours, then discovering which concepts are logically fundamental to them will still be an important task, one concerned with maintaining the coherence of our modes of cognition. But even if we did ever manage to sort out all inconsistencies, even if no anomalies turned up for a thousand years, we couldn't be sure we had arrived at absolute knowledge, we might have, but how could we be sure that there was nothing we missed?

The Kantian approach to the endeavour of discovering absolute truth really foundered irrevocably once non-Euclidean geometries were shown to be coherent. Up to that time it had seemed very plausible to suggest that Euclid had provided a necessarily true account of space, but once it was shown that other equally consistent geometries could be constructed which fit the empirical data at least as well as Euclid the idea that any particular geometry is absolutely true became undermined. And this fact, that formal systems based on different axioms can fit reality equally well, undermines any attempt to suggest that mathematics or symbolic logic can reveal the true nature of things in the light of eternity.

Discovering our current fundamental categories of cognition is very much like generating an axiomatic basis for geometry. The belief that geometrical axioms reveal necessary truths about the world foundered once it was realised that any number of incompatible sets of axioms could generate consistent geometries. We must surely conclude that we should judge our fundamental categories of cognition similarly and doubt any claims to the effect that identifying such categories necessarily reveals truth about the world. We should

also doubt, I believe, that any particular concepts, even those which are logically primitive in our current ways of looking, are, in principle, unalterable. Just because we can't conceive of doing without certain concepts, doesn't mean that no-one will ever come up with a better way of looking. The switch from a 'physics' which talked in terms of metaphysical essences to a purely extensional physics was a massive conceptual change which altered fundamental categories, not just peripheral ones. Similarly, Einsteinian physics struck at the foundations of classical physics, not just the superstructure. My point is that what we, at any point in time, can or cannot make sense of in no way establishes that no-one will ever come up with a way of looking that makes sense of ideas which, in terms of earlier ways of looking, just didn't make sense. In other words, philosophers who insist on asserting that we could never jettison 'this' or 'that' concept simply fail to acknowledge the sheer ingenuity of people's imaginations, an ingenuity which the history of ideas clearly exhibits.

Some logicians, however, still seem to want to claim that there are statements which are absolutely true. One example that might be offered is $\sim(A. \sim A)$, and the claim that this axiom is an absolute truth might be supported by pointing out that it makes no sense to deny it, this amounting to a formal criterion. This is, in one sense true, although difficulties arise for those logicians when intuitive mathematicians refuse to assert this law and still get results which they find significant. But the real problem with $\sim(A. \sim A)$ is that, as it stands, its undeniability is analytic, it is absolutely true because it is so defined and this sort of truth, like the truth of 'all unmarried men are batchelors' is unilluminating in the extreme - it tells us about how the symbol system in question works and reveals nothing about the reality beyond that symbol system.

Before a statement like ~(A .~A) can tell us anything about the non-symbolic world we must quantify the variable A, but this quantification is itself problematic. Consider ~(this is a particle.~this is a particle). Now in one sense this might also tell us about nothing more than the way we use language. We can read ~(this is a particle . this is not a particle) in two ways. If we take it as stating a rule constitutive of a particular mode of language then it is trivially true because it is read as saying something like, 'In this language game we are not allowed to say any of 'this' that 'this' is both a particle and 'this' is not a particle. But to interpret~(this is a particle.~this is not a particle) in this way tells us nothing about the world beyond the language game. In order to make our statement usefully informative we must read it as saying something like, 'look where you may in the universe you will never find anything of which it is true to say that this is both a particle and not a particle'. This must be re-interpreted as saying that if there is anything which our concept of a particle fits, then it is not true of that 'thing' (or class of things) that our concept of a particle does not fit it. This is a conditional statement and a problematic one because the notion of a concept fitting some aspect of reality isn't an all or nothing affair. Before ~(this is a particle . . this is not a particle) can be shown to be an absolute truth we must establish that the concept of a particle is, in fact, an absolute concept, a concept that captures totally the nature of some aspect of reality and this task is separate from questions about the undeniability of the formal statement ~(A .~A). In other words substituting the referring expression 'this is a particle' for the formal variable 'A' in ~(A .~A) leads to absolute truth only if the substitution is proper. And the substitution is proper only if our concept of a particle is an absolute concept only if our concept of a particle really does capture the nature of some aspect of reality 'in the light of eternity'.

Now I chose the concept of a particle here precisely because of the problems it holds for sub-atomic physicsts. Sub-atomic 'particles' from electrons down to quarks, show some characteristics which allow them to be described as particles, but they also show some characteristics which require them to be described as wave forms. In other words, whilst our concept of a particle seems to fit the world well enough in some respects, in others it is lacking, and similarly for our concept of a wave form. Thus the substitution of 'this is a particle' for the 'A' in ~(A.~A) does not reveal absolute truth because it is an improper substitution and it is improper because our notion of a particle, whilst it fits reality to some degree (a degree which is adequate to make the concept useful to scientists) is not an absolute concept, it fails to capture the 'absolute' nature of reality.

It seems to me that this shows that formal absolutes are of little use in revealing the nature of things 'sub specie aeternitatis'. As soon as we try to make such absolutes informative, by quantifying the formal variables, we come up against the problem of whether 'this' concept can properly be used as a value of the formal variable - and when we're looking for absolutes the only concepts that can properly be used as such values are absolute concepts. In order to show that a substitution of a referring concept for a formal variable in an undeniable (by definition) formal statement will lead to absolute truth we need to establish independantly that the referring concept captures the nature of some aspect of reality not merely to an adequate degree, but absolutely. It seems to me that this is something we cannot be sure about and hence that logic alone can never give us empirical certainty.

Now such considerations make me doubtful about endeavours like that which Findlay pursues in 'Ascent to the Absolute' in which the problem is that of giving an account of reality which is logically necessary, has

complete internal consistency and is, of logical necessity, complete. Findlay admits freely that he has not produces such an account, has not succeeded in specifying a necessarily existent Absolute, and hence (which he also admits) doesn't know whether he is pursuing truth or merely a pipe-dream. In 'Ascent to the Absolute' he is concerned primarily with discussing not the nature of the Absolute, but with the prior task of deciding what sort of demands would have to be made on a specification of an Absolute, with what would or would not count as such a specification- and in this he would not, I think, claim more than partial success.

I myself am very much troubled by the question of how, even if we produced an account of reality which subsumed all other modes of understanding, was consistent, and, formally speaking, was closed (i.e. did not generate statements which were meaningless according to the criterion of meaning operant within the system), we could be confident of its completeness. The main source of my disquiet is the thought that we might produce the necessary closure artificially and prematurely - that there might be something we missed. This possibility is made more disturbing by the fact that, as Godel has shown, at least one of our formal systems (that of pure mathematics) is not closed. I am not, however, a good enough formal logician to pursue such problems, and for my purposes here I don't need to be.

All I need to observe here is something which I believe I have already established - that as things stand we have no way of supporting any claim for absolute knowledge of how things are in the universe - excepting of course the fact that Formal systems are governed by certain rules, and we know that for absolute fact because we decided what those rules should be, this sort of trivial knowledge of absolute fact is not, as I have said, either very illuminating or relevant to more

important issues like empirical knowledge of anything that exists independantly of the decisions we make about the use of symbol systems.

My primary objective in this section has been with establishing that strongly absolutist claims about how to achieve understanding just aren't justified. I cannot coherently claim, a priori, that absolutism of the sort that Findlay is interested in is doomed to failure. But I can say that the problem solving power of the sorts of absolutist endeavours I have discussed is demonstrably less than that of the more piecemeal approach of the empirical disciplines. Thus I can coherently claim that the rational course for anyone who wants to understand how things are in the world is to abandon metaphysics and to turn to the less certain but more productive approach which I have designated rational piecemealism.

I believe that this is the rational course even though the nature of the piecemeal approach means that there is an inescapable possibility that it is the wrong course. All the solutions offered under the programme of rational piecemealism are partial insofar as all the paradigm/theory complexes generated have anomalies. But the models of relevant aspects of the world generated by this method of enquiry often, if my earlier arguments have any validity, give us a reasonable idea of how the world is. The absolutist approach defined by Findlay can never approximate in the same way as rational piecemealism can - it is an all-or-nothing affair. So far it has given us nothing and so appears as best left alone, but if it is ever successful it will make the piecemeal approach totally redundant. I don't expect this to happen, but the possibility that it might is logically undeniable. Thus I must rest on my doubts and say that whilst an absolutism which approaches the quest for truth by investigating the possibility of specifying an Absolute (in Findlay's case) is coherent, it is also an approach which has been pursued long and fruitlessly.

This being the case I conclude that the rational course is to set it to one side and adopt a more piecemeal approach, based on the problem-solving model of systematic enquiry I have already outlined.

There is one final sort of assertion that might be claimed to be absolutely true in the sense of saying how things are in the world. An ordinary language assertion like, "The heart is a pump," it might be said, is just true beyond all question. This is misleading. A statement like, "The heart is a pump," is likely to be appraised as true for evermore, but it may not always have the same meaning. In order to understand such a statement more fully we must look at its 'conceptual context', the language game which surrounds it, and ultimately this investigation must lead us to the theoretical assumptions (crude though they may be) which underpin it. In terms of a pre-Newtonian understanding of the world a statement like, "The heart is a pump," (I am ignoring the fact that people before Newton knew little about the circulation. of the blood) might well have meant something like, "The nature of the heart is such that it gains pleasure from the passage of blood through its chambers. In pursuit of continuing pleasure the heart produces those motions requisite for the conducting of blood through it." Today, "The heart is a pump," is seen against a functionalist/evolutionary account of physiology and is true insofar as this is the correct way of looking at living organisms. It seems very likely that any change in paradigm would preserve the truth of such a low-level statement as, "The heart is a pump," since its vagueness would allow it to be reinterpreted so as to fit neatly into any perspective, but to call it an absolute truth really does seem to be going too far, Its unassailability is more a result of its vagueness and hence its 're-interpretability' than of its revealing the nature of the heart.

After my next section, in which I will discuss the

role of interest in systematic enquiry, I will return to discussion of problem solving and to the idea of there being different problem-domains in which different ways of looking are appropriate.

The role of interest in systematic enquiry.

Although I have said much that is relevant to the subject of interest in what I have written so far my preoccupation with the role of problems means that what I've said has been largely negative. In this section I want to draw my past remarks together and to say something positive on the role which interest plays in theoretical activity.

The first sense of interest I want to isolate is that of 'taking an interest' in which someone takes note of/pays attention to something or other. This, I think it is fairly clear, is a very basic notion of interest which simply observes a tendency, whether it is a tendency of a teenage boy to seek out the company of the girl next door, of a lexicographer to note unusual turns of phrase in conversation or the tendency of a philosopher to watch for new papers on subjects which non-philosophers would regard as esoteric. What this notion of interest picks out is just a behavioural tendency, it is a 'thin' notion in that it says nothing about why this or that person pays attention to/takes note of the object of their interest.

When we begin to talk about the reasons why someone takes an interest in something we encounter the familiar intrinsic/extrinsic dichotomy, except that in the case of interest the two terms have different significances to those encountered in discussing worthwhileness, or rather this is an implication of what I have said so far - I will explain.

Intrinsic interest is interest in something for its own sake, someone who is intrinsically interested engages with the object of his interest (i.e. takes an interest) for reasons of emotion, he is spurred by his passions, from the carnal passions as with adolescents and their initial sexual encounters to the more rational

passions which may motivate researchers in the systematic disciplines - I am thinking here of things like the passion for truth etc. which Peters talks about. The important thing to note here is that whereas some people with a passion for, say, topology may also be able to justify a claim for the importance of their subject, this ability to justify their taking an interest in topology is unrelated to their intrinsic interest. This follows from my critique of Peters' position in chapter 5 of 'Ethics and Education' where I noted that we can only get from a statement like 'All topologists are intrinsically interested in/motivated to engage with topology' to 'And this shows topology to be an intrinsically worthwhile endeavour' on the basis of an unjustifiable intuitionism. Topologists, or members of other communities of intrinsic interest, may all 'feel' or 'intuit' the importance of the endeavour in which they are engaged, but the establishment of this collective 'intuition' as reflecting the true value of their endeavour as opposed to being nothing more than a collective prejudice in its favour depends upon giving objective reasons why it is valuable.

This giving of objective argument in support of a claim for general value is precisely the giving of reasons why people in general should take an interest in a discipline even if it doesn't 'grab' them, even if they don't feel drawn to it/it doesn't arouse their (rational) passions. This leads us on to extrinsic interest. The person who is extrinsically interested in something(and has no intrinsic interest in it) isn't drawn to it emotionally, his reasons for taking an interest are the links between what he takes an interest in and something which he finds intrinsically interesting (with interest, as with worthwhileness the intrinsic must have logical priority simply because if someone found nothing at all intrinsically interesting there could, in principle, be no basis for extrinsic interest). Giving objective argument for the value of some theoretical endeavour <u>is</u> giving reasons as to why people should be

interested in it, irrespective of their emotive response to the subject (or lack of it).

The gap between intrinsic worthwhileness and intrinsic interest is to be found in the psychology of human beings. I have argued that if there are logical links between everyday problems which people with justification judge to be important and the basic problems of a specialist area of discourse, then it is proper to say that the area of discourse is intrinsically worthwhile. But we cannot go beyond this to say that therefore people should be intrinsically interested. Even though there may be a case for saying that emotions can be educated to some extent we must, I believe, acknowledge an element of passivity in our emotional responses. Whatever may be said about the rightness or wrongness of some emotional responses it remains the case that often we just do respond - a man might fall in love with the wrong sort of woman (and vice versa), but there is no use in saying that he/she should have done something about it - we can refuse to act on the basis of love (like the young nobleman in 'Seven Samurai' who denies his love for the peasant girl because she is not of his class), or we can feign love, but there is an element of passivity about it which we can't avoid, we can't turn love on and off at will. It seems to me that intrinsic interest is like this - someone can objectively argue for the intrinsic worthwhileness of a subject and still, without contradicting himself, say, "But it doesn't fascinate/grab me at all as a study."

There is also the fact that even if there are logical links between the problems which someone does engage with out of intrinsic interest and some more theoretical problems, that individuals may not be equally drawn to the more theoretical endeavour. A musician, for instance, may be drawn to the sounds made possible through the use of electronics, and may realise that he can't hope to gain full control of those sounds without understanding the electronics to some extent, but he still may regard

acquiring that understanding as a necessary evil. The sounds he finds interesting are electronic sounds, sounds unobtainable except through electronics, so he must, logically, regard knowing how the electronics works, as valuable if he regards being able to manipulate the sounds as important, but at the same time as acknowledging the logical links between the two activities (manipulating electronic sounds and manipulating the electronics) he might still coherently maintain the position of asserting that his interest in the sounds is intrinsic whereas his interest in the electronics is extrinsic. By analogy with the phenomenon of the opacity of the imagination we might term this the opacity of the emotions - our emotional responses just don't generalise along the lines of logical connections.

All this is moving towards a reiteration of what I have already argued - that pure reflective interest, a passionate drive towards/an intrinsic interest in discovering the way things are, cannot play any decisive role in establishing systematic enquiry as having general value. Many people do feel that the unreflective life is not worth living and sheer curiosity is undoubtedly an important motivation for many researchers, but many others simply don't reflect much and aren't interested in anything theoretical. If such an attitude to theory is inconsistent with an individual's other interests then we can properly criticize him, but if this isn't the case then we need some other way to establish that he should take an interest, or at least admit the value of that which he ignores. I suggest that this can be done by showing the links between theoretical problems and everyday problems which anybody living in the world simply cannot avoid. But it should be clear by now that intrinsic interest just cannot feature in criteria for the general value of theoretical activity of any sort.

This rejection of intrinsic interest as evidence of intrinsic worthwhileness follows immediately we recognise that the jump from, "N-thousand people value 'this' activity," to, "So 'this' activity is intrinsically worthwhile," cannot be supported except by intuitionism. I don't want to deny that the value of an activity for an individual can be related to his intrinsic interest in it and I don't want to claim that those people who breed budgerigars or play chess are engaged in empty, totally worthless, activities. But what I do want to say is that no general claim to value, designed to support (e.g.) a claim for special funding or for the inclusion of something in the compulsory curriculum of educational institutions can be supported by recourse to intrinsic interest. Intrinsic interest is a fact about (some) people's emotional responses to (some) thing(s). It is <u>not</u> a criterion of understanding or value.

It seems to me that there is a big difference between, say, breeding budgies and doing physics, but that the difference isn't a matter of the committment of those who engage in these activities. Rather the difference consists in the basic problems of physics being problems which are of much greater general importance in life than the problem of breeding bigger and better formed/marked budgerigars. Physics deals with basic problems about the world which everybody comes face to face with. Insofar as we value the ability to predict and deal with the vagaries of nature, and insofar as the basic problems with which physics deals are related to at least some of the important problems we encounter in living in the world, we should value physics. Physics gives us an understanding of certain aspects of the world which are problematic for us and that understanding allows us to anticipate and hence avoid/deal with the problems that arise. Even if we aren't drawn to physics for its own sake we must, insofar as the world poses problems for us which are related to the problems with which physics deals, value physics. Problems remain with the question of what sort of problem the model of the

world that physics has arrived at solves and, more importantly, with the question of what sorts of unsolved problems should properly be included in the problem-domain of physics. These problems will be dealt with when I discuss problem-domains in subsequent sections.

The central point I want to make is that insofar as life presents us with problems, insofar as we are justified in judging those problems to be important, and insofar as some areas of systematic enquiry deals with basic problems which are related to those important everyday problems, we should regard that area of enquiry as valuable. The understanding that a discipline arrives at consists in the model/paradigm/theory complexes it generates capturing the world to the best degree that can be managed. The value of that understanding (beyond the value that any activity has in terms of giving enjoyment to those who enjoy it or satisfying the curiosity of the curious) must, it seems to me, consist in the relevance of the theory to problems that people justifiably regard as important. And in the absence of any tenable theory which can tell us, a priori, what is important it seems reasonable to me to suggest that if people generally judge some problem to be important we should, in the absence of good reasons as to why they are wrong, accept that it <u>is</u> important.

Having digressed a little and having once more been mostly negative in my account of intrinsic interest I will now make the apparently paradoxical statement that it is of vital importance that the researchers within a discipline should constitute a community of intrinsic interest. This is <u>not</u> because only those who are intrinsically interested can, of logical necessity achieve 'true' understanding - I have already argued that this isn't so. Nor is it because only intrinsic interest could constitute a reason for engaging with theoretical enquiry - I've already noted that someone might engage with theory as a necessary evil because

he sees the objective links between something which he finds intrinsically interesting and the theoretical endeavour. There's no theoretical limit to the understanding someone might acquire through extrinsic interest.

The reasons why intrinsic interest is crucial in the development of the systematic disciplines are two. The first reason is that when someone is engaged with difficult ideas at the frontier of our understanding it's not merely genius or inspiration or sheer luck that's needed for success. A more important ingredient is sheer effort, a single minded drive towards solution. Sometimes this might be something noble, someone might selflessly drive himself on for the betterment of humanity. But at least as often the drive comes from what might be better described as an almost psychopathic compulsion. It's not just researchers who get compulsions. In cricket a batsman who consistently gets out playing one stroke badly will often practise to get it right, sometimes out of professional integrity, at other times because it annoys him/ nags at him/preys on his mind 'til he puts his technique right. Similarly a researcher working on a problem often couldn't give up even if he wanted to - the problem nags at him, almost driving him round the bend 'til he gets rid of it. It's like a massive build up of pressure that demands to be released and that pressure can only be relieved, the problem can only be got out of mind, by finding a solution. It seems to me that this sort of emotional drive towards solving a problem is often crucial in making someone put in the necessary hours. It is not a matter of logical necessity that this must be the case, but in many cases it is clearly an important contingent factor. Without the inner spur of an overwhelming intrinsic interest much valuable research would never be done.

The second reason why intrinsic interest is important in systematic enquiry is that people whose interest is extrinsic are likely, as a matter of contingent rather

than necessary fact, to stop once a theory is good enough to deal with the particular problem which is their prime concern. Such an approach is likely to lead to theory being produced which is not general enough or which has not been pushed to its limits. A discipline without people involved in it whose interest was intrinsic would be likely to end up as a hotch-potch of mis-matched theories which would be little more than glorified context-specific rules of thumb. In such a situation there would be no real attempt to work out a paradigm for the discipline as a whole, no attempt to sort out inconsistencies and, of prime importance, no attempt to push a paradigm to its limits to find out what was wrong with it and hence get an idea of what might constitute a better paradigm. Again this is not a matter of logic, but rather an observation that people who are intrinsically interested in pursuing only very limited purposes are likely to make do with a theory that is good enough for the limited context even if they see clearly that it has problems with lack of generality.

So it seems to be a contingent fact that often only intrinsic interest will lead a worker to investigate the nooks and crannies of a paradigm where, despite their having few obvious direct implications for everyday practice, theoretical issues are raised which can have important implications for a whole discipline.

Intrinsic interest, then, is very important in systematic enquiry not as a giver of general value for specific endeavours, but as the motivating force which, as a matter of contingent fact, keeps our understanding expanding. Without intrinsic interest in theory for its own sake it seems likely that the theoretical endeavours would become impoverished. People who regarded theory only as extrinsically interesting would be likely to treat each particular theory instrumentally and would be likely to disregard the need to follow up even those theories that have no immediate 'cash value'.

Such an approach would, it seems to me, be likely, as a matter of contingent fact, to leave the systematic disciplines in a very sorry state indeed. I may, of course, be wrong about this, but the alternatives seem to be either instrumentalism or else scholasticism. I have discussed the risks of instrumentalism and, I believe, shown them not to be worth taking. The scholastic alternative would seem to amount to adopting some variety of strong absolutism, for instance Findlay's approach, and here again I believe the risks to be too great and have given my reasons.

My position on intrinsic interest, then, is not that it is, of logical necessity, the only way to acquire true understanding, but that, as a matter of contingent fact, those who are intrinsically interested in theoretical enquiry are more likely to pursue theory to its limits, thus giving us a better, less 'bitty', understanding of a particular area. Nevertheless I think that we must resist the temptation to do what Peters, influenced by Kant, did in 'Ethics and Education'. Elevating intrinsic interest to a supreme logical position in the pursuit of understanding is dangerous in that it tempts us towards an unjustifiable attempt to justify specialists' value claims through an appeal to intuitionism. The problem here is that if we cannot support intuitionist claims with objective argument we are left in a position where we cannot separate veridical intuition from the collective predjudices of communities of intrinsic interest. This means that going along with the intuitionist line opens up the possibility that communities may go off the rails, that they may end up as forms of life in which 'achieving understanding' really amounts to little more than learning to play the game according to the rules.

The only way to avoid this danger is to opt for the policy of rational piecemealism in which ways of looking are consciously designed to solve specific sorts of problem and logical incompatibilities between

ways of looking designed to solve different sorts of problem are discounted because the difference in problems make the different modes of language incommensurable not in a Kuhnian sense in which initiates of one paradigm can't understand another, but in a more rational sense in which we see different ways of looking as suitable for particular purposes and not interchangeable.

Absolutists are likely to object here on the grounds that on this approach incompatible statements like, for instance, "Reality is a complex system completely describable in extensional terms," and "Some aspects of reality, notable people, must be described in intentional terms," will be regarded as true. But I don't think this is a problem once we realise that all we are giving up is the unjustifiable assertion of completeness of ways of looking. What I am arguing is that we cannot, for reasons already given, justify saying "Reality is completely and exclusively described by 'this' way of looking, " (whatever 'this' way of looking is). Instead we must say that using 'this' way of looking allows us to solve 'these' problems and hence that it seems reasonable to say that 'this' way of looking captures the nature of the relevant aspects of reality better than any other currently available way of looking. That different ways of looking may use different concepts and hence give different sorts of true statement is no problem so long as we regard truth as a relationship between language games which we are justified in using and the world, accepting that the truth criteria we use almost certainly fall short of revealing absolute truth. That we must use this sort of notion of truth as opposed to the notion that 'this statement is true' must mean 'this statement captures how things are in the light of eternity' seems obvious to me given that the failure of absolutism to give us criteria of absolute truth means that to adopt the absolutist notion of truth would leave us without any means of evaluating any empirical statement for truth.

Problem Domains

I wish to define the problem domain of a discipline at a point in time as the range of basic problems, those which are also problems beyond the particular specialist community, for which the discipline's paradigm can properly be said to be appropriate at that time, and also those problems with which the paradigm cannot deal but which the community constitutive of the discipline regards as ones which they should be able to handle. Two things should be obvious here, first that as a discipline evolves its problem domain will alter and second that there will be much debate on demarcation. An example of the change through evolution of a problem domain would be the way geometry, since the generation of non-Euclidean geometries, has ceased to be seen as a way of deducing the underlying 'form' of space. A still very much alive demarcation dispute is that concerning the problem domain of physics, notably questions about the propriety of physicalist accounts of mind.

In defining a discipline's problem domain I have not mentioned the internal problems of particular theories and paradigms because these are problems which, although they must play a part in assessments of progressiveness, are theory-generated. The notion of a problem domain I want to use here is to do with the basic problem-solving purposes of systematic enquiry, the reasons why we have different disciplines at all. I think it is quite evident that internal problems are not what systematic enquiry is primarily concerned with. Such problems turn up in the course of theory construction and must be dealt with, but the general raison d'etre of systematic enquiry must be to do not with the internal problems any theory generates, but with basic problems.

What I want to do is to attempt to distinguish different areas of problems, different general problem

domains in which different ways of looking will have to be adopted in order to arrive at adequate solutions. It is very important to remember that a basic problem is one that is see-able as a problem from an ordinary language point of view and that ordinary language changes through time, in part because of feed-back from specialist ways of looking (and schools must play a part in the feed-back process as we become acquainted, to some extent, with specialist ways of looking whilst at school). Thus I am not suggesting, a priori, that there just are certain distinct problem domains. What I want to say is that in our evolving engagement with basic problems we have found it necessary to redefine and to approach different problems in different ways at the theoretical level. This division of labour in the general theoretical problem-solving endeavour has led to different disciplines, and even different specialities within disciplines, generating their own language games/ways of looking which, although they may differ in some respects, nevertheless form families (in a Wittgensteinian sense). One well defined 'family' is that which is centred on physics, including chemistry, the engineering sciences, some areas of geography (notably geology) and, questionably, some areas of the life sciences, such as molecular biology. In this 'family' it is generally accepted that (at least most) key concepts are reducible to those of physics, though the family's edges are blurred, for instance in the life sciences.

My approach to the differentiation of problem domains will be to look at the differences between the sorts of problem families of disciplines, as they are now, deal with and to show that there are limits to the range of problems with which any of our current (families of) specialist ways of looking can deal. This, in effect, is what I did much earlier when I tried to demonstrate the incompleteness of mechanistic accounts of mind. I argued that a purely extensional conceptual framework, such as that still used by physics,

could not say anything about the consciousness we all possess, in, for instance, our perceptual awareness of an external reality. Thus I argued that the problem domain of the family of disciplines centred on physics did not cover all the basic problems we find facing us in life, in particular this way of looking/family of ways of looking simply cannot deal with personal problems, the problems which arise for us because we are conscious agents.

The problem domains I will distinguish will be those we have now, not those which were always there (even if we didn't realise it) or those we will always have. The existence of problem domains based on different paradigms would suggest (but not prove) that we were dealing with different sorts of thing (ontologically different) if not for the further fact that the problem domains have no sharp borders. I will show later that some problems seem to fall between domains, in 'grey areas' where we're not sure about how to solve them. And this will suggest that a more subtle understanding of some problems might define a new problem domain, either taking some problem from other domains whilst leaving them intact, or else subsuming older domains as the new way of looking reconciles the tensions between the older paradigms. The failure of the pre-Galilean unified approach, mixing what we now regard as distinct sorts of problem, for instance those of physics and theology, led to a fragmentation of approaches, but there is some evidence, particularly in the physical sciences, of re-unification. I do not believe that we are now in a new age of reason because I don't believe that the distinctions I will make between problem domains have anything more than descriptive validity - I fully expect that in time things will change. Nevertheless I believe that the account I will give will constitute a reasonable appraisal of the current 'state of the game', and since it is this we wish school pupils to become

acquainted with (both what the state of the game is and that it is the state of the game and not God-given 'TRUTH') I believe that it is proper to organise a school's curriculum along the lines I will indicate.

I don't believe that every discipline's problem domain will fall clearly within one or another of the more general problem domains I will distinguish, there are the grey areas and there are disciplines which, of necessity, must try to deal with the poorly-understood relations/correlations between different sorts of problems. But the central point I want to argue for is that to the best of our knowledge (and understanding) there are different sorts of problem. These might be different in some ontological respect, but it is more likely that they are different with respect to our current modes of problem solving. Whichever is the case it remains crucial to be aware of the differences when approaching a problem theoretically - an attempt at solving a problem which uses a clearly inappropriate way of looking is no more than a waste of effort. This awareness is specially important in disciplines which deal with more than one sort of problem.

I will also be concerned in subsequent sections with establishing the value of systematic enquiry in different domains by showing each domain's problems to be of general importance. This being so I should make a few remarks about the way of establishing systematic enquiry as valuable I have adopted. Some people might object to my approach by accusing me of confusing the statements, 'people think x is important,' and 'x is important,' and pointing out that if I take these statements to be logically equivalent I stipulatively rule out the possibility that people might be wrong. The point is correct, but I'm not confusing the two statements, rather I am trying to deal with, 'x is important (valuable),' in the absence of a compelling a priori theory of value. It seems

essential to me that we deal with, 'x is important,' in a way that doesn't presuppose that we are looking for a final, absolute, evaluation of its truth. I take this course to follow from the decision I argued for earlier to adopt a piecemeal approach to understanding on the grounds that it is demonstrably more progressive than any more strongly absolutist approach. If we accept a strongly absolutist interpretation of, 'x is important,' we can't justify claiming that anything is important, we just don't have the necessary truth criteria.

If, however, we follow a policy of rational piecemealism we can, I believe, justify particular value judgements by means of what is, in effect, a Popperian procedure in which we accept that whilst we cannot demonstrate a generally held belief in the value of something to be absolutely right, we can usually give reasons why some such beliefs shouldn't be held. Of course the parallel with Popper should not be taken to imply a reification of values. I don't want, and I don't need, to discuss whether there really are such things as absolute values or whether all talk of value is about a community trying to sort out a value system which has consensus approval.All I am saying is that in the absence of an a priori theory of value we should accept that what people value <u>is</u> valuable provided that no good reasons can be given as to why they are wrong in the specific context. This accepts that we may be wrong, that experience might lead us to change our priorities, but this is no problem for my account, it simple accepts the degree of uncertainty to which the whole policy of rational piecemealism is prone and always has been. This uncertainty is what makes understanding a matter of degree and hence allows us to talk about our understanding progressing. I also freely admit that the appearance of a correct a priori theory of value would make my approach look very weak indeed, but again this is always a possibility for rational piecemealism and I have already given my reasons

for discounting it.

I do not accept that the possibility of different cultures justifiably holding different values, which my account allows, in any way undermines it. If different cultures hold different values, values appropriate for the particular way of life/environment in which the cultures developed, then that must be taken as part of the richness of life. If a clash of values becomes dangerous then compromise will be necessary (assuming that neither culture, in the context of the clash, can be shown to be wrong). Failure to compromise would seem odd from the standpoint of rational piecemealism, for surely most people prefer compromise to possible conflict. Of course sometimes people fail to compromise through a faith in the absolute truth of their value system. Since such beliefs cannot be justified any refusal to compromise in the face of possible conflict which results from adhering to them uncritically must be regarded as irrational - hence diplomacy.

Thus, I believe, showing disciplines to be valuable by showing them to be concerned with problems which are justifiably seen to be important in non-specialist contexts is the rational way to go about things given the rationality of putting more strongly absolutist accounts to one side(on the grounds of their non-progressiveness/stagnation)and opting for rational piecemealism. I will now move on to a detailed attempt to distinguish five general problem domains. I will call them the inanimate, the animate, the interpersonal, the personal and, finally the absolutist. I will deal with each separately before going on to talk about the relationships between these more general domains and specific disciplines and their domains.

The Inanimate.

There is a considerable body of problems which have been solved by the physical sciences over the last few hundred years on the presupposition that what is being looked at is a mechanical system in which chains of events are linked causally (in the same sense of causality in which a moving billiard ball causes a stationary one to move by striking it). The model used has evolved over this time from one in which mechanisms were seen as governed by strictly deterministic laws to a probablistic model in which the laws discovered by physical scientists are seen as describing patterns which emerge from large numbers of random events; just as we get Pascal's triangle, or a close approximation from large numbers of trials in which different numbers of coins are tossed and the numbers of heads or tails recorded. The basic events (like whether we get heads or tails when a single coin is tossed) are random, but statistical patterns emerge for large numbers of events. The probablistic model has emerged this century largely from particle physics where, for instance, the position of an electron at a point in time cannot be predicted precisely. Instead the probability of finding an electron at a particular time and place is calculated using a probability density function - the Schrödinger equation. This change has, in part, been made necessary by the observation of a-causal events - events which 'just happen' apparently with no causally antecedent event.

Over successive paradigm changes the physical sciences have remained mechanistic in the sense that they have maintained a purely extensional conceptual framework for the purpose of describing problematic phenomena. Insofar as this strategy has led to our being able to predict things like the motion of celestial bodies and the behaviour of sub-atomic particles with reasonable (not total) accuracy we are justified in judging that for, some aspects of the world, a mechanistic model

captures the way things are to a reasonable degree. Thus there is a large central area of phenomena which seems quite properly describable in the ways physical science describes them, which is to say that the family of ways of looking used by physical scientists does give us a pretty good understanding of some things.

There are, however, problems, for instance those of consciousness and agency, the physical sciences can't deal with, simply because the adoption of a purely extensional mode of description constitutes a decision (at least a tacit decision) to ignore the possibility that what is being described possess consciousness and agency. I argued that this was so in my discussion of the incompleteness of mechanistic accounts.

This, however, doesn't explain or justify my distinguishing problems with the inanimate world from those which arise with the animate world. This is my task here. When physiologists or molecular biologists 'dissect' a living organism, describing what they find in terms of (mechanistic) ways of looking derived from physics, or else in functional terms, they describe everything there is to see. There is nothing left over which they can't describe and, if we take seriously objections to Cartesian dualism of the sort that Strawson (for example) raised in 'Individuals', we cannot postulate an entity (the mind) which is substantially different from physical bodies so that we can't see it and hence miss it out when we 'pull things apart' as physical scientists tend to do. Such considerations lead me to see the distinction between different ways of looking as being between our modes of description rather than between ontologically different 'things'. In other words I maintain that physiologists don't see the mind anywhere simply because their way of looking isn't geared to deal with the problems of mind. A similar situation exists with respect to works of art. A physical scientist can analyse a painting completely in the sense that when he has finished there will be no visible 'thing' that he

has not dealt with. But he will have said nothing at all about the painting's beauty because his way of looking just isn't appropriate for dealing with that sort of problem.

It seems to me that the ways of looking currently used by physical scientists have similar problems with the phenomenon of life. The living/not living distinction is currently a major problem both for medical science (especially in the case of transplant donors) and for molecular biologists (especially when studying viruses). There seems to be a gap between describing something as a complex physical structure (at the molecular level) and as a living organism. Life seems clearly to be absent in a crystal of salt or in certain complex 'organic' molecules such as those described in organic chemistry (roughly the chemistry of carbon compounds) and clearly to be present in, say, Amoeba, but the status of viruses is unclear.

To attempt to obliterate the animate/inanimate distinction by saying that we ascribe life to physical mechanisms of a certain level of complexity, a level which we have not yet adequately defined, seems unacceptable. This sort of physicalist reductionism involving an assertion of faith that the physicalist endeavour will deliver the goods one day, is familiar from physicalist accounts of mind. It is, I believe, unacceptable because, like physicalist accounts of mind, it treats what seems to be a logical distinction as a matter of degree rather than kind. I will elaborate.

At the'quiet centre' of the domain of the inanimate, the problems with which the physical sciences seem to deal quite adequately, are phenomena like a moving billiard ball striking a stationary one, causing it to move. Now billiard balls seem, in terms of our non-specialist understanding of the world, to be paradigm-examples of inanimate objects (whatever they're

made of they're just not alive). On the other hand a dog, again from an ordinary language point of view, is alive. However unclear the animate/inanimate distinction is in the case of viruses it seems very clear that it holds between dogs and billiard balls.

There are two possibilities here. The first is that the common-sense distinction between animate and inanimate is correct. In this case we should not be surprised that the physical sciences can cast no light on the problem of saying what it is to be alive. The conceptual framework(s) of the physical sciences should be seen (in this case) as appropriate for inanimate objects but inappropriate for the animate, and this is due to the fact that those ways of looking were generated in dealing with problems for which the question of whether the 'things' involved were alive or not was irrelevant (a cat and a lead weight dropped from a tower in a vacuum still fall at the same rate). Historically we can see that this is the case with physics since Newton and this fact makes me lean towards saying that the physical sciences can say nothing about life simply because physical scientists in the past haven't seen this as a problem that concerns them.

There is however, a second possibility. This is that the living/not living distinction is a matter of degree, that our common-sense distinction doesn't really work on close examination. What I want to say here is that this might possibly be the case, but that to take this as implying that the life-sciences can be subsumed under the physical-sciences-as-they-are-now would be wrong. I say this because the physical sciences, historically, have been primarily interested in problems, like the description of the motion of celestial bodies, the fine structure of matter etc, in which life has not been seen as a relevant factor. To use a way of looking generated in the context of problems of this sort to try and clear up the question of life seems to me to be at least imprudent.

My point is that <u>if</u> the animate/inanimate distinction is one of degree, then there must be some property which matter possess which leads to sufficiently complex concatenations of the basic elements (and I mean sub-atomic particles and the like, not the elements of the periodic table) exhibiting the characteristics of life. But this property is not one which physics has elucidated. The problem here is comparable with that of consciousness. It might be possible to elucidate a notion of awareness that would make talk of the awareness of (e.g.) an electron coherent and hence enable us to give an acceptable 'physicalist' account of mind. This 'physicalist' account of mind, however, would be very different from accounts given so far in that the new notion of a fundamental particle which would be given, with particles properly describable as aware (in a sense on which I could not even begin to speculate), would constitute a greater paradigm change than has happened in physics since Galileo and Newton. I couldn't say whether such a change will occur - physicists, after all, are full of surprises. But no such change has occurred yet.

In a similar way, it seems to me, it might be possible to characterise matter in a way which would make the animate/inanimate distinction appear as one of degree rather than kind. But as things stand, it appears reasonable to say, physics has not dealt with the problem of life and cannot deal with it (as the current problems of medicine and molecular biology evince). Again I wouldn't attempt to legislate about what might happen. But the paradigm change that would allow us to talk meaningfully about life-potential being a property of matter, which becomes outwardly manifest only when it is structured in certain ways, has not yet been formulated. Thus I feel confident in maintaining that there is a central problem-domain properly to be called the inanimate in which the physical sciences operate successfully and that there is another central area of

problems, the animate, in which the ways of looking which currently operate in the inanimate are simply inappropriate as an approach to solving important problems.

The existence of grey areas between the animate and inanimate is no problem for my account. That there are problems with the characterisation of viruses (for instance) seems to me to be symptomatic of the incompleteness of our current ways of understanding, an indication that we still have a long way to go, that much work has to be done before we can claim to understand the phenomenon of life in relation to the structure of matter.

I think that the value of these areas of theoretical activity (disciplines and sub-disciplines) that give us an understanding of those phenomena involved in the problem-domain of the inanimate (i.e. problems where questions about whether the 'things' involved are alive or not, or are conscious agents, are irrelevant) should be quite clear. We all live in the world where such problems arise and many of the problems which confront us in everyday life are merely specific instances of more general problems which the theoretical activity of specialists in this area is geared to solving. Insofar as we find related every-day problems to be important we should judge the theoretical avtivity, which generates the understanding that enables us to solve those problems, to be of value - and this 'should' has the force of 'as a matter of logical necessity'. That people might not value such understanding in terms of being intrinsically interested in the physical sciences is, as I observed earlier, a psychological fact about us. But insofar as everybody must find themselves confronted, at some time, with problems with the inanimate world with which they must deal, they must, if they are not to be inconsistent, acquiesce to the value of the physical sciences and other disciplines concerned with the inanimate.

There are, and have been, those who would say that problems which arise through our living in the inanimate world are unimportant. These would include mystics who regard preparation for an after life or for becoming 'one with the universe' as the central problem in life. Such positions are absolutist in the strong sense which I have already discussed. They involve the making of unsupportable assertions about how things are and as such are not at all compelling - although individuals might feel drawn to such arguments on a psychlogical level. My contention is that the everyday problems which fall within the domain of the inanimate are problems which people have always found important, even when they were not seen as problems with inanimate objects. Magical ways of looking, in which dealing with floods or volcanoes, were (and in places, e.g. Bali, still are) seen as problems about placating/controlling spirits, still saw handling what we now see as problems with the inanimate as important. Insofar as there are no compelling arguments to show that dealing with such problems isn't important I suggest that we must see those disciplines which deal with the problems of what we now see as the inanimate world as being of value.

The Animate.

This is the domain of the life sciences. These disciplines are not logically distinct from those concerned with the inanimate in terms of using disjoint conceptual framework: molecular biology and physiology both draw on the concepts of physics. This is unobjectionable so long as workers on this area do not forget that such concepts as physics currently uses are unlikely to give an adequate solution to one central problem in the domain of the animate - that of saying what it is to be alive. The central feature of problems in this domain is that they are problems which we have with living things because they are alive, from classificatory problems in botany and zoology, through problems about the origins of species to medical problems, agricultural problems (including the selective breeding of varieties of plants and animals, but not tractor mechanics), the study of animal behaviour, food chains and much more. It must be stressed again here that the distinctness of the animate from the inanimate is a matter of(currently) contingent fact, not of logical necessity. This is how things are, not how things, in principle, will always be.

Just as the 'border' between the animate and the inanimate is blurred because we are not sure about how physicalist descriptions of organisms in terms of the way physics describes the fine structure of matter relate to functionalist accounts of animal physiology, evolution and behaviour, the 'border' between the animate and the interpersonal is problematic (as is that between these areas and the domain of the personal). In the case of Amoeba all behaviour seems to be 'built-in', there seems to be little room for talk of learning, all Amoebas react in similar ways in similar contexts, a mechanistic stimulus/response model seems adequate to describe the behaviour of these non-cellular animals except insofar as they do seem to be alive, a notion which, as we have seen, physics seems incapable, so far, of elucidating.

As we go 'up' the evolutionary scale the role of instinct, or genetic pre-wiring, diminishes. In even a simple animal like planarium, which has a crude nervous system with a 'brain' consisting of swollen ganglia, learning of a simple kind, like learning a maze or to avoid electric shocks, does occur. In pigeons and rats, the behaviourists' favourite pets, learning can be of quite complex skills (like the ability to distinguish between photographs of cars and trucks which Rachlin describes his pigeons as acquiring in the quote I gave when I discussed stimulus -response accounts). The difficulty of describing such skill acquisition in stimulus/response terminology has led some people (e.g. Hamlyn in his paper 'Conditioning and Behaviour' in 'Explanation in the Behavioural Sciences' eds: Borger and Cioffi,C.U.P '70) to doubt whether the notion of operant conditioning is coherent.

Still higher in the animal kingdom we find behaviour which is so adaptable that animal behaviourists describe it as social. Wolves hunt cooperatively, one group chasing a herd of caribou towards other members of the pack who do the killing. Food is carried back to feed nursing mothers and other pack members who didn't go hunting but stayed behind to guard the mothers and cubs. In wolves and most other social animals the same social behaviour is replicated between different groups of the same species which leads to the conclusion that the observed behavioural 'adaptability' is, at best, strictly limited by instinct. But when we get to the primates things get more complex.

In one recent Open University television programme I had occasion to watch an account was given of an experiment done with two closely related varieties of baboon. In one variety tribes are organised in 'paternalistic groups, the males keeping a close watch on their females and chastising any female who strays too far from the family group. In the other variety females have much more freedom, being allowed to stray far from the family group in the course of foraging for food etc. One part of the project involved capturing females from the latter, less

'paternalistic', group and with suitable safeguards (i.e. in initial contact between male and female the female was protected by a cage) released in the territory of the former group. The 'paternalistic' male attempted to 'round up' the new female using all the usual (within that variety of baboon) strategies, resorting ultimately to force. The female soon adapted to her new 'home society', quickly learning not to stray too far from the family group.

This is a poor recollection of what was a much more careful experiment than my account indicates. But it serves as an illustration that the ability to acquire habits of social behaviour, as opposed to those habits being genetically pre-wired, occurs in species other than homo sapiens. It doesn't demonstrate that the 'social rules' of baboons are arrived at in a predominantly conventional or 'cultural' manner (i.e. through social learning) as opposed to being predominantly instinctive. What it does demonstrate is that the instinctive behaviour/learned behaviour distinction is not such that an animal's behavioural habits must be arrived at entirely in one way or the other. Instinct and learning interact. Even in human beings, where social behaviour seems much more a result of socialisation than of genetic pre-wiring, there must be some sort of instinctual basis for learning to build on (this is a theme I have discussed twice already, though not in quite these terms).

A final example of the instinct /convention distinction being one which is a matter of degree with respect to particular species (perhaps even individuals) must be the recent work done on teaching sign-language to chimpanzees and gorillas. In a recent television programme the gorilla Koko was seen using sign language to get her keeper to stand under a window so that she (Koko) could climb up and look through the window at another gorilla doing his lessons. In the context of the initial signings Koko could not see the other gorilla,

that's why she had to get her keeper to stand under the window - so Koko could stand on her shoulders. It seems to me that whether or not Koko's grasp of the signs she uses is of a sort that would make it proper to speak of her knowing a language we have here a clear case of purposive use of conventional signs (i.e. symbols). Koko couldn't see the other gorilla, so the use of signs couldn't plausibly be explained on any sort of stimulus/response model. We can only explain what happened by saying that Koko wanted to see the other gorilla and got her wish by means of a strategy which involved the use of symbols, signs which have no natural significance for gorillas, which are useful in communication only insofar as both participants grasp what might be called the signs' 'communicative act potential' in the context.

The point of all this is to establish that the problem domain of the animate, which must include the problems of instinctual behaviour, and the problem domain of the interpersonal, which must include the problems of what H.P. Grice called 'non-natural meaning', cannot safely be taken to be distinct in a clear cut way. Talk of instinct or genetic pre-wiring is talk about significance which things have for an organism because of its (biological/genetic) nature, without learning being involved. Talk of natural meaning or associative/indexical significance is talk about an organism learning about the world through associating events which frequently (for whatever reason) occur in conjunction. Talk of non-natural meaning, or symbolic significance is talk about signs which possess whatever significance they do possess only by virtue of intersubjective agreement on their 'usability' for doing certain things.

It is part of the arrogance of western culture to believe that we are distinct from the rest of nature. We used to claim that only we have souls, now we say that only we have the potential to use language. What I want to say is that establishing our uniqueness by giving a syntactic description of human languages and then refusing to

acknowledge any being that doesn't use a symbol system of that sort as a subject of experience seems to me to be a dubious strategy. It seems to me that the central role of language in giving human beings an advantage over other animals is in allowing us to communicate information about what is not immediately present in the context of communication, what is physically remote, what is past and what might be in the future. In Koko's signings this seems to be present to some degree, even as far as telling lies about who broke a toy. Language makes it possible for us to possess abstract knowledge, and in the limited sense of possessing and being able to communicate information about what is not immediately present. Koko seems to be a knower of this sort. She is not a sophisticated language user, but, I suggest, she is a user of symbols and, in a more limited way than most human beings, a knower. Thus, I believe, she constitutes evidence for the assertion that we are different from other animals in degree rather than in kind.

What I'm getting at here is the idea that we should be careful about the distinction between instinctual behaviour and conventional behaviour. The anecdotal evidence I've given so far in this section is illustrative of the difficulties that arise in describing the origins of social behaviour. My earlier discussion of language acquisition is much stronger evidence. There I, in effect, argued that as a matter of logical necessity we could not acquire language unless some things are naturally significant for us. This amounts to saying that there must be something about human nature that facilitates language acquisition. And only terminology separates this last assertion from one to the effect that there must be some instinctual/genetically pre-wired basis for the human ability to generate (conventionally defined) symbol systems, including language. It is only a short and unproblematic step from this point to saying that human conventions and hence human social institutions cannot be totally independent of human nature.

Thus, although the formal distinction between instinctual

(i.e. 'built-in to the organism rather than learned) and conventional (arrived at through intersubjective agreement) modes of behaviour clearly holds, there are simple no animals in which behaviour is defined completely by convention. The domain of the animate clearly includes the problems of instinct whilst that of the interpersonal clearly includes problems of conventionality. But the 'grey area' between the animate and the interpersonal includes problems about the inter-relatedness of instinct and convention. There is no rigid divide between talk of social behaviour in animals and human social behaviour, so the two problem domains and the disciplines that work in them must inter-relate. In particular I hope that even the anecdotal evidence I have quoted here, on wolves, baboons and on Koko the gorilla, serves to indicate that we should be very careful about simply presupposing a rigid distinction between human social behaviour and animal social behaviour in terms of the former being governed by convention and the latter by instinct. The difference is not as clearly understood as all that, as the nature vs. nurture issue in psychology demonstrates. And this is to suggest that a sociology (of humanity) which is not augmented by/based on a theory of human nature is likely to go wrong. In the developed world we already suffer because many aspects of our way of life, food, housing conditions (especially in the larger cities), work pressures, economic pressures etc. are more than many people can adapt to - hence the growing incidence of ulcers, heart disease and psychiatric disorder. To talk about our social institutions without talking about human nature is to ignore very important questions not about the morality of what we do, but about the wisdom of putting ourselves into situations which human beings, by our nature, have trouble adapting to. Such questions are, I suggest, closely related to questions about natural environments and degrees of adaptibility which zoologists raise about other species.

We of the species homo sapiens are, outside of viruses and bacteria, the most adaptable species on the planet,

but there are limits to our adaptability (outer space being one environment we have difficulty adapting to both physically and mentally). It seems to me that it is by no means clear that we have nothing to learn about ourselves as animals. The problems of the animate don't go away when we start looking at human beings, we just bury them beneath a mass of convention.

The value of the modes of understanding generated in engagement with the problems of the animate should be clear, We are living beings and have problems which arise from that fact - problems about food, medical problems, ecological problems etc. Many of the problems of the animate can be, sometimes immediately (medical problems), sometimes in the long run (ecological problems), matters of life and death. Other problems, like how to grow better roses or to keep a lawn moss-free, are not so pressing. But in general I can think of no argument, other than total nihilism (which should entail the holder of the nihilistic beliefs sitting quietly waiting for death as for a nihilist to eat or act purposively would be inconsistent) that could undermine the contention that many of the everyday problems which fall in the domain of the animate are (justifiably seen to be) important, and hence that theoretical activity in this area is of value.

The Interpersonal.

The domain of the interpersonal covers all problems arising from the conventionality of our social institutions. Included are problems of anthropology and sociology and of linguistics (language being a social institution i.e. governed by rules arrived at through intersubjective agreement). I would also include some areas of psychology and the whole of moral discourse for reasons to be given later. Also included are a whole host of everyday problems which arise through our living in a conventionally constituted social world.

The problems of the interpersonal are problems with social phenomena, and, as such, must be approached from a perspective which sees social institutions as constituted by intersubjective agreement within the relevant community. Social institutions exert control on a community only for so long as there is general agreement, tacit or overt, on how things should be done within that community. Once there is no consensus on, no general acquiesence to, the rules constitutive of a particular way of life, then that way of life must change. The interpersonal, then, is concerned with phenomena which have no reality over and above that conferred on them by intersubjective agreement on the rules which constitute them as social phenomena.

This defines the central area of the domain of the interpersonal where laws, rules of etiquette etc. are a matter of convention. But this area is not clearly cut off from the domain of the animate. Certain fundamental social principles, such as the wrongness of lying, seem to be on a much less culturally-variable footing than, for instance, rules about when it's appropriate to say 'please' and 'thank-you'. In the case of lying, for example, it seems not merely that lying complicates things in ways some cultures have taken a dislike to. Rather lying undermines the possibility of language. Earlier I remarked that a notion of 'speech-act appropriateness'

for statements, must depend for its usefulness on a presupposition that any statement would be appropriate for telling a lie. Quine has made similar observations about translation, pointing out that without a presupposition of truth it would become impossible for an anthropologist even to begin compiling a dictionary for a new language. So, it appears, lying isn't just something we dislike. Instead lying is something we must judge to be wrong simply because the notion of a community of language users where lying is the norm is incoherent. In other words our concern for telling the truth is an essential element in our being language users. If we didn't normally tell the truth language would lose its usefulness as a means of communication or, to be more precise, we could not possess a language at all as we could never reach the necessary intersubjective agreement on the speech act potential of words.

Now insofar as our ability to generate language, as my earlier arguments about the innate basis for language acquisition suggested, is a part of an unlearned human nature, certain elements of our social organisation seem natural as opposed to conventional. Problems with those aspects of our social organisation would seem, as I suggested earlier, to fall in the domain of the animate rather than that of the interpersonal - here again is a grey area, the problem of the relationship between human nature (our 'instincts') and human social institutions (our conventions). But whatever the nature of the interdependance of 'instinct' and convention the two are distinct. When we ask about human nature we are asking about things that people just tend to do because of the way they are (as a matter of contingent 'biological' fact). In such a context we are talking about matters of fact which are seen as morally neutral, we are not concerned with the moral acceptability of those basic drives/tendencies (or whatever) constitutive of our humanity, the task of describing human beings from the perspective of the animate, a task which belongs in part to psychology, involves an attempt simply to specify

human nature, what is built into us, the unlearned, innate basis on which further learning builds.

Only when we get to the problems of the interpersonal proper can we raise moral questions, because only with respect to our (conventionally constituted) social institutions have our communal decisions any real force in terms of changing how things are. The natural world (animate and inanimate) is independent of us - no amount of (our) discussion can possibly stop gravity doing what it does, or alter the social organisation of a wolf-pack. But we can alter human conventions by discussion, we can change the rules of cricket or rugby or the laws of the land, thus changing the social world. This is why it makes sense to question the S.African apartheid laws or the British anti-terrorist laws on moral grounds whilst the idea of a moral condemnation of the laws of gravity is a joke. Morality presupposes choice - it makes no sense to raise moral questions on issues where we have no option but to be passive observers. Moral questions arise when, through either commission or ommission, someone could have made things other than they were. So an astronomer watching a super-nova doesn't raise moral questions simply because such things happen and there's no way to do anything about it. An ecologist watching the destruction of a forest for profit, however, must raise moral questions (amongst others) precisely because there we could do something, there we have a choice and if the pulp-company is making profits by destroying huge areas of land, a region's ecological balance and hence the livelihood and way of life of people who have traditionally lived in that place, then moral and political questions occur immediately.

The key to the interpersonal proper is that these are problems of interpersonal interaction where, all things being equal, it is assumed that people are responsible for the (foreseeable) consequences of their acts. The basic feature of the social world is that

almost everything about it is 'up for grabs', is open to being changed (whether change occurs on a rational basis being a further question.) The interpersonal covers problems with rule governed systems for which the possibilty of changing the rules is ever-present. When a being is admitted to the community of moral discourse, seen as a responsible person, to be given the rights and duties that status carries with it,an assumption of rationality is made which amounts to assuming that the being is capable of acting in 'this' way or 'that' for reasons. This carries with it presuppositions that the being in question can change its behaviour as rules change, can see social life as rule governed, can grasp the reasons behind the rules and can take part in discussion which leads to intersubjective agreement on rules. This further presupposes that that being can rationally overcome its nature. Thus a man of violent disposition is expected to control his tendency towards violence insofar as this is regarded as necessary within his home society.

The social world, then, to some extent at least, is against nature. We assume that human reason is able to climb 'above' instinct or natural tendency and establish modes of conduct on a basis of rational interpersonal agreement. That things don't always turn out that way is a matter of (contingent) fact, but the idea which informs our present understanding of social institutions is that, in principle, social change could always be rationally planned even though it often isn't. Whether or not this belief is correct depends on how much of the irrationality we see, for instance in politics, mirrors human nature as opposed to resulting from lack of understanding. This problem, the giving of an account of the rôle of human nature in determining human social organisation, is so tied up with political beliefs (ie. party political) that it seems unlikely that an adequate solution will be forthcoming in the near furture.

The whole right/left debate can be seen to rest on different accounts of human nature, the agressive, competitive individual out to make his own way v. the co-operative member of a community out for the good of all. That each stereotype is a caricature and that each political extreme seems uninterested in this fact might, to a sociologist, for example, suggest that politics is not to be approached on the assumption that what is said constitutes the reason for what is done by politicians. In the irrationality of politics we might, perhaps, find out more about human nature than about reason. We might, given sufficient study, be forced to conclude that the interpersonal isn't as important a problem-domain as we usually think, that the areas of choice about social institutions are severely restricted by other factors. Such restrictions might include natural economic factors (of the sort that go, 'It is impossible to keep three people alive on enough food for two,' but not facts about exchange rates insofar as these are not fully constrained by natural fact) and human nature (the will to power in individuals, perhaps, or acquiesence to existing convention being shown to be more a matter of 'running with the pack' than of rational reflection.)

Here again we have come up against a 'grey area', problems we're not sure about, the seemingly intractable nature v nurture issue. Psychology spans this issue and it is a major concern for psychologists. Developmental psychology is concerned with human nature in relation to human social institutions, with the unlearned 'processes' that underpin our ability to be initiated into conventionally defined communities, most notably the community of language users. Social psychology, where researchers observe and try to make sense of what happens in (eg.) seminars or committee meetings or juries, attempts to explain what happens not merely in terms of the rationality or otherwise of

the arguments forwarded, but in terms of the relative status of the participants and how this is established. Here again the question of the origin of the 'rules' observed can be raised. Are they entirely conventional or do they relate to a more primitive 'pecking order' of the sort that animal behaviourists have described (eg. Lorenz's work).

The notion of conventionality itself becomes problematic here. We cannot equate 'conventional' with 'logically arbitrary' as many of the laws of physics are matters of contingent fact, logically they could be otherwise, it just happens that they're not. When we talk about convention we mean more than just, 'things could logically, be otherwise,' we also mean that we could make them so. But although the rules of a game like football are changeable (and I'm ignoring problems about how far the rules can change before we're playing something other than football) in ways that make football a paradigm example of a conventionally defined activity, it seems at least possible that some aspects of human social activity are constrained by human nature to a degrée which makes change impossible in the sense that different rules, although a logical possibility, would simply be unworkable given the way people (by their nature) just are.

All this doesn't undermine completely the idea that that there is a separate domain of the interpersonal constituted by the problems which arise from the conventionality of many of our social institutions. What my remarks so far <u>do</u> show is that we must be careful about identifying problems as interpersonal as opposed to animate in certain areas. These two problem domains inter-relate in ways we understand poorly as yet and to assume that culture (in the sense of what is established conventionally) separates man from the rest of the animal kingdom in a way which makes problems with the animate easily distinguishable from the problems of the

interpersonal is a mistake. We simply cannot ignore the possibility that human nature exerts much greater influence on human social organisation than we currently allow in our theories.

However elusive the 'boundary' between the animate and the interpersonal may be there are clearly areas where the nature of social institutions is conventional in the sense that people could logically and as a matter of contingent fact, choose to do things differently. Cultural differences in things ranging from interpersonal etiquette, to political organisation and language, demonstrate this. In the central area of the domain of the interpersonal it is clearly intersubjective agreement on rules that constitutes social institutions and which serves to distinguish (in terms of central areas) the natural from the social in its full sense, where 'social' is taken to imply conventionally defined and hence changeable.

Sociology would seem to be the discipline primarily concerned with the problems in this area, but sociologists seem to have adopted an approach to the social world that fails to acknowledge that social institutions are defined only through intersubjective agreement, agreement that can be reached through rational discussion whether or not this is how it is reached in particular instances. Sociologists, particularly, though not exclusively, those with Marxist inclinations, seem to write people out of social institutions. These workers seem to have adopted a model in which the evolution of social institutions is seen as the same sort of problem which paleontologists have in mapping out the evolution of the species. On such a model the evolution of institutions is seen as having inertia of its own, with people being dragged along in the wake of change. Although such an approach may cast light on some problems it fails to show people as constituting through (tacit or overt) acquiesence to rules, the social institutions in

which they participate. As such sociology of the sort under discussion fails to deal with important problems. It takes an over-view of society from a 'height' so great that people are missed out. Not all sociology fails to put people into their proper place, social psychologists don't, and theories like 'role-play' do talk about people although here the emphasis is on the role the individual finds forced on him by his position within an institutional hierarchy. What sociology seems to ignore far too often is the other side of the 'role-play' coin, the impact on institutions of people who take part in the institutionalized activities because they must, but who simply don't regard the rules they follow as anything more than empty ritual. It is such people who, ultimately, will change the institution in one way or another and it is such people who simply don't get mentioned in much sociology, except as 'deviants' (I will say more on this in my discussion of the domain of the personal.)

The problems of the interpersonal are inter-personal problems, problems which arise in deciding how to organize interpersonal interaction within a community. As this is the case any attempt to solve such problems must cast light on the relations between people and the institutions they constitute through intersubjective agreement. It is in this endeavour, it seems to me, that much recent sociology fails, and fails through ommission. Sociologists just don't seem to (want to) put the necessary effort into specifying the people/social institutions relationship fully. Too many sociologists seem to regard social institutions in much the same way as, say, astronomers regard the behaviour of celestial phenomena. But, insofar as the constitutive role of people with respect to social institutions serves to distinguish them from natural phenomena in a clear-cut way (even allowing for the grey area around the nature v nurture issue) this move by sociologists seems to rob their theory of much explanatory power with respect to the problems of the interpersonal.

The sociologists' reluctance to look more closely at the relations of people to social institutions quite possibly results from the belief, often held tacitly, that it is society, through the transmission from generation to generation of the often unreflectively adhered-to values, attitudes and beliefs which constitute each individual's cutural inheritance, that determines consciousness rather than vice versa. This essentially Marxist dictum, though it is believed by many who are not Marxists, simply discounts the possibility that a rational and critical awareness of his home culture can lead an individual to reject or modify what is passed on to him. It undermines completely the idea that social change could be planned through rational discussion,

It is undeniable that society does determine consciousness to the extent that perception is mediated by intersubjectively defined conceptual frameworks, and that many socially transmitted values, attitudes and beliefs are held unreflectively by the majority of people in a society. But the progress of understanding unavoidably involves the rejection and/or modification of 'received' ways of looking, and the fact that many people are unreflective about their values, attitudes and beliefs does nothing to establish that things could not be otherwise - the whole point of education is surely tied up with an attempt to make people more critically aware, both of themselves and others. Society may exercise some sort of hegemony over the consciousness of the unreflective, but it seems far from contentious to suggest that in rational reflection we have a way of 'digging out' the hidden presuppositions built into our everyday ways of looking through socialisation and submitting them to scrutiny. In my next section I will argue that there are phenomena which are not fully explicable in terms of the social. If my remarks on the personal are not entirely vacuous my next section will demonstrate that people cannot be safely regarded as mere social constructs and hence that sociology's failure to put people in their

proper position with respect to the social institutions which they constitute (and sociology seeks to describe) is a serious ommission.

In what I have said I have included much of psychology and all of moral discourse in the domain of the interpersonal. In the case of psychology this inclusion might be questioned by those who wonder why I don't include it in the personal. After all, it might be argued, at least some of the problems with which psychologists engage are problems about the relation between subjects of experience and the world. It is the case, however, that most areas of psychology, particularly the Anglo-American schools, are concerned with problems which occur in, or between, the domains of the animate and the interpersonal. They are concerned with what is common to us all (albeit to different degrees) rather then with what is unique about particular individuals. Learning theory (from behaviourism to studies of language acquisition) is concerned with common traits, with those aspects of human nature which provide the basis for initiation into social institutions and with the process of initiation itself. Similarly the study of individual differences, especially in intelligence, is concerned with human nature, even if the notion of intelligence as an innate and invariant trait has been questioned by many who take the cultural variance which I.Q. test results show as evidence that intelligence is a normative notion. No matter what the outcome of the debate the study of individual differences is seen to be an endeavour primarily concerned with problems which occur in (or somewhere between) the domain's of the animate and the interpersonal.

In the realm of moral discourse opposition to my views is likely to arise from those who see moral questions as essentially absolutist. Religious groups are always likely to make specific moral assertions and take them to be non-negotiable on the grounds that they are

divine law revealed through priests and/or prophets. Such assertions must be rejected as moral imperatives on the ground that their claim to absolute truth is, as a matter of contingent fact, unjustified (they may be right but we can't demonstrate their correctness publicly) I covered the arguments here in my section on absolutism.

More rationally some philosophers might want to say that there remains a possibility that a tenable absolutist account of value might be given. This is something I fully accept, although I would be dishonest if I didn't go on to say that I regard it as a theoretical possibility with little probability of occurence. This is why I put absolutism to one side, opting for rational piecemealism. Until I see an account of moral value which establishes once and for all that, a priori, there are certain things that each person really should do (or not), I will continue to argue that the rational course is to interpret moral questions as being essentially about what one should or should not be allowed to do in a particular social context (and why). If absolutism delivers the goods then this policy will be shown to be in error, but as things stand I suggest that the rational course is to locate moral problems in the domain of the interpersonal, as this is the only way we have of solving them.

The value of the interpersonal mode of understanding must derive, as far as I can see, from the fact that people do live in society and from the fact that understanding the social world better should allow us to regulate both our lives as individuals and the society in which we live more efficiently. Understanding our relationships to others and to the various social institutions with which we come in to contact during our lives must be regarded valuable insofar as we regard knowing what to expect from others as important. People do generally seem to regard knowing what to

expect from others in social interaction as being important and I know of no argument to the effect that people are wrong to value such knowledge. Thus, on a non-absolutist policy of accepting that people are justified in holding the values they hold in the absence of good arguments as to why they are wrong, we must regard ourselves as being justified in regarding the interpersonal as a valuable mode of understanding.

It also seems clear that the interpersonal stands justified in terms of its being concerned with establishing a mode of language in which problems about which of the rules governing a particular society are wrong (and, again, why) can be discussed usefully. Some people, it is true, seem to regard the social world not as something they play a part in constituting but as a given, a game with rules which are sancrosanct. For such individuals the most pressing interest is in how to win the game and they simply don't raise questions about whether the rules are the right ones. But most people, no matter how unreflective, at some time find themselves questioning the rules. It might be something relatively trivial like a motorist getting upset because his insurance company settled for 'tit for tat' on an accident where he felt the other driver was to blame. More significantly it might be the case of a black man embittered by the difficulty he has in getting a job when similarly qualified white men seem to have few problems - here the hidden, unspoken conventions of racism are seen and resented. Whatever the particular incident, however, the vast majority of people do, on occasion, find themselves thinking that 'this' is wrong or that things would be better if 'that' rule were implemented. I think it is fair to say that such problems are widely recognised as important, even if people often seem to shy from them. And this recognition of the importance of problems which fall within the domain of the interpersonal is also the recognition of the value of the specialist theory generated in engagement with the basic problems of the domain.

The interpersonal is also shown to be important because it covers problems related to the processes of initiation, through those disciplines dealing with the way we, as individuals, become part of society. Bringing up and educating children is widely recognised as an important matter, and this seems to be an area in which there seems little room for suggesting that we are making a mountain out of a molehill. Since this is so, and there are areas spanning the interpersonal and animate which seem primarily interested in acquiring an understanding of the processes of initiation which (as a matter of contingent fact) help us in facilitating it, we can conclude that this is one more way in which claims that an interpersonal understanding is of general value can be justified. We may not have got very far in producing a unified account of ourselves as social beings, but the task of constructing such an account (and of relating it to an account of human nature which in turn must relate both to problems of the animate and the personal) can be shown to be important in many different ways, can be shown to relate to so many everyday problems which we are justified in judging to be important, that we cannot doubt that work in different areas of sociology and psychology, and in ethics also, that may in time lead to a production of a unified interpersonal account must be seen as worthwhile. The theoretical activity is concerned with solving problems which are logically related to everyday problems which we are justified in regarding as important and which constitute the basis of a claim for the general value of the theoretical activities engaged in by those concerned with the interpersonal.

There are still problems remaining, particularly with the relationship between the personal and the interpersonal - these will be dealt with in the next section.

The Personal.

The domain of the personal includes all the problems which arise from our inner lives, from the feelings and emotions (and aesthetic experiences) which we all have. The only area of psychology which sets out to give a theoretical description of mind that is designed to make our inner lives more comprehensible, and hence handlable, is psychoanalysis, and this seems to be the only theory generating systematic discipline in the area, as yet. Psychoanalysis ('though perhaps with limited success as yet) seems to be engaged in attempting to specify the specialist way of looking in an explicit form. I suggest, however, that recent work on psi-phenomena, where researchers find it necessary to talk of correlations between e.e.g. readings of brain-states and experimental subjects' reports of their states of mind (accounts are given in Ostrander and Schroeder: 'Psychic discoveries behind the Iron Curtain') may lead to fresh insights into this area as serious enquiry into such phenomena as telepathy and telekinesis seems to require researchers to work with the mediums' subjective reports of their states of mind as opposed to merely correlating more 'objectively' measurable events (like e.e.g. readings and external events).

I also want to suggest that engagement in artistic creativity, from drama to the visual arts and music, is a way of achieving a degree of self-awareness which amounts to an increased knowledge of the sort of person one is in terms of likes and dislikes, motivation etc. Engagement in artistic activity, I want to say, can become a voyage of self discovery, an artist reflecting on his art must, if it is his art and not merely a pastiche of 'received' techniques and ideas put together in accordance with established rules, find in his work elements of his self-hood which were previously not seen or else perceived only dimly. Although the arts do not attempt to formulate

explicit theories of mind (even if particular artists might be full of theories - for instance Bernstein's attempt to relate Chomsky's psycho-linguistics to music in his Harvard lectures) art reveals the artist, makes the inner person more accessible, particularly to himself. The 'acquaintance' knowledge acquired has no explicit theoretical basis to support it, it cannot easily be put into propositional form and tested for truth. Its existence is manifest only in the person, only in the artist's growing maturity and control of his chosen medium, only in the sense of fulfillment and satisfaction which results from the artist's sense of 'that's right' when faced with a finished work. I will argue later that a personal notion of rightness, something likely to be objected to by many, is an essential notion if we want to talk about artistic progress. In the domain of the personal, I will suggest, the acquisition of (self)understanding is often more a matter of reflective engagement with the self than of learning to use an explicitly formulated way of looking - I will say more about direct understanding of this sort in a later section.

The distinctness of the personal from the inanimate is relatively clear. Much earlier I argued that mechanistic accounts of the sort that are adequate as problem solvers in the domain of the inanimate are simply incapable, because they use only extensional concepts of coming to grips with very simple facts about people for instance, that in our perceptual consciousness we are aware, not of neuro-electrical impulses, but of an external reality. The personal includes only problems that arise from our being subjects of experience, and of 'inner' experience. Since the personal is concerned with problems arising out of the workings of our minds, the influence those workings have on our lives, and since the sort of understanding appropriate for the problems of the personal is one that brings awareness of the influences of our inner lives (including

the sub-conscious etc.), so that we can understand and handle ourselves better, a physicalist account is seen to be straightforwardly innappropriate as a way of solving those problems.

There are, nevertheless, correlations between physical states and mental states which must raise the question of whether this distinction is between different ways of talking about the same thing (ontologically speaking), each mode of description complementing the incompleteness of the other, as opposed to brain states and states of mind being ontologically distinct. This seems to be a possibility, but I would point out again that a way of looking that explained how the fine structure of a matter related to the phenomenon of consciousness would be very different from any paradigm physics has used yet and would constitute a very ambitious attempt to extend the problem domain of physics. Thus we wouldn't have a reduction of the personal to the physical as the physical sciences are now, rather we would have a new perspective which subsumed both the personal and the inanimate (and it would need to link up the animate and interpersonal too - a very tall order)."

The distinctness of the personal from the animate is not so clear cut. This is largely because we are unsure about what should be written into the concept of a person. I am free, having rejected the possibility of a purely extensional account of mind, to reject accounts which equate 'person' with ' a body of a certain sort'. But that doesn't rule out making 'possess a body of a certain sort,' (eg. human) a necessary condition for 'person-hood'. We can rule out this sort of move, perhaps, by asking about what we would think if a being whose body showed more plant characteristics than animal (eg. cells with cellulose cell walls) landed a space ship on Clapham Common. Would we want to dissect the body to see if we had a person here or would we instead assume that the beings 'movements' needed to be interpreted as purposive action and act

towards it accordingly - as to a (very important) person? I think, perhaps, the latter. It might be that a person must be, or have been, embodied (as Strawson argues in 'Individuals'), but specification of what sort of body is surely to be written out of the concept. It is not long since white Europeans 'solved' the problem of the Tasmanian aborigines by hunting then to extinction - after all they were black and if you write 'has a white skin' or 'has a caucasian body' into your concept of a person shooting non-caucasian human beings comes under the heading of 'hunting animals'. Perhaps this sort of'reasoning' was what enabled commanders of Nazi concentration camps to live perfectly normal family lives when off duty whilst supervising the slaughter of Jews and other 'non persons' when on duty.

One necessary condition for being a person seems to be that of being a subject of experience, of being aware of things and acting because of the way things are rather than simply reacting as the world impinges on the mechanism. The problem here is that of deciding when it is appropriate to ascribe 'person-hood' to an entity and when not. We have to take human beings to be persons because the only way to make sense of much of human verbal behaviour, notably our use of intentional constructions in language, is to assume that 'this' body is that of a person. However the only animals we know about that demonstrably do possess language and to which we must (hence) ascribe states of mind are ourselves - human beings.

Here again we have the temptation to postulate a rigid break between humanity and the rest of the animal kingdom, a break which would separate both the interpersonal and the personal from the animate in a clear cut way. But the examples I gave earlier to show how the animate and the interpersonal overlap work just as well (especially the 'signing' primates like Koko) as indications that we should be careful about stipulating

that human beings are the only true subjects of experience, as distinct from 'reacting mechanisms', on this planet.

It is by no means obvious that talk of animals showing affection, being grumpy etc., is always unjustifiable anthropomorphism. Although little old ladies talking about their cats do, typically, fall into this trap, it cannot be taken for granted that talk of bonds of affection, for instance, between a mahout and his elephant is only metaphorical We're not sure, in the absence of language, whether it would be correct or not to ascribe awareness and mental activity to an animal, but that doesn't mean that an animal that doesn't use language is not a subject of experience - it just means that we can't tell whether it is or not.

My suggestion is that we can formally separate the personal from the animate by saying that the special problems of the personal are recognisable only given the prior assumption that what we are looking at is a subject of experience. The problems of the animate on the other hand can be handled adequately on the assumption that what is being looked at is a reacting organism (where 'organism' is meant to imply 'possessing life '). We should, however, remember that this distinction doesn't necessarily separate humanity from the rest. We are simply distinguishing attempts to account for the behaviour of reacting organisms (Amoeba being a paradigm here) and attempts to explain (by reference to the workings of the mind) the activities of subjects of experience (Homosapiens being our paradigm here). This doesn't identify a cutting off point where all on one side are reacting organisms whilst on the other side are the subjects of experience. A more likely interpretation is that many animals (including ourselves) are in some respects reacting organisms and in others subjects of experience who make judgements and act. What I am saying is that the problems of the animate and the

personal, like the problems of the animate and the interpersonal, are distinct but not separate. By 'distinct' I mean we can give formal,criteria for sorting the different sorts of problems out (at least in central areas). By 'not separate' I mean that because of the overlap between areas, because there are some phenomena (like Koko's signing) that we're not sure how to interpret, we should avoid the temptation to regard the different sorts of problems as mutually irrelevant. In particular I would suggest that just as it seems likely that to regard human social organizations as entirely conventional is to unjustifiably discount the influence of human nature, it also seems likely that regarding all a person's activities as resulting from (rational) judgements made about experience is likely to leave out things like fear and bizarre-ness reactions which may have some origin not in rational cognition, but in animal reaction.

The whole question is fraught with difficulties. The animate, interpersonal and personal are inter-related in ways we simply don't understand very well. The animate deals with problems of the nature of living things, ignoring matters arising out of conventionality and consciousness. The interpersonal centres on the problems of convention, but cannot safely go on its way behaving as if human nature is irrelevent to human social organisation. The personal deals with problems of people, as subjects of experience with complex inner lives. It is separate from the animate insofar as it deals with problems involving consciousness which the animate doesn't deal with, but it is intimately intertwined with the animate simply because it makes no sense to talk about sexual love (for instance) merely in intellectual terms without relating the more cerebral aspects of the experience to the more 'instinctual' aspects, to human nature. Similarly the personal and interpersonal are intertwined. Many of our feelings, emotions, aesthetic

experiences <u>are</u> socially conditioned - people the world over feel sad when they listen to sad music, but try playing a sad piece from Northern India to the average Western European and he just won't 'perceive' the sadness. Given this fact, that an individual's inner life is, to some extent at least, socially structured, the question arises of whether there is a workable distinction to be made between the interpersonal and the personal.

The fundamental problem-solving purpose of the personal, as I conceive of it, is to find a way to help people to come to terms with their inner life, to acquire a degree of self knowledge which will allow them to plan their lives as far as possible in a way that will allow them to achieve a measure of contentment, to avoid the anxieties which an inappropriate life style can lead to. Many people seem to be able to go along with the expectations of others to a very great degree without any problems, but for some people going along with such expectations leads to problems. There are significant numbers of people who achieve success in some field (in a socially defined sense of success) just to realise that it's not enough. As an illustration of what I mean I offer the case of a mature student who obtained his teaching certificate on the same course as myself. He had been the head of an art department in an advertising agency, had achieved a degree of material comfort, and had reared children who by then had left home. He had given up his job in order to become an art teacher in the hope that teaching would give him a job which he felt to be worthwhile. Whether or not teaching is currently giving him what he was looking for is irrelevant to the basic point I'm trying to get at. The fact is that this 'successful' man found that his 'success' was hollow, that he just didn't feel right in his job. He was lucky in that he arrived at a point in his life at which social and economic pressures were sufficiently relaxed so that he could take a drop

in income in order to try to find some area of work that would give him his fulfillment his work in advertising just didn't give him. A number of mature students in colleges of education seem to be looking for something to do which will be more meaningful to them than the jobs they have been doing. And many such students choose teaching knowing very well that it will never give them the material rewards which our society values so highly to the same degree as the jobs they have left behind. They believe that they will find teaching more meaningful, that it will give them more job satisfaction, more of a sense of fulfillment. Whether they are right or not is debatable, but, it seems to me, the fact that these people have come to question the material definition of success (bigger homes bigger cars, more money) which our society seems to be based on shows that something in their inner lives, in the way they as individuals feel about their life style, has led them to question convention and to look around for some employment which will both allow them to survive within society and to find fulfillment on a personal level.

There are other examples of people who find themselves dissatisfied with life styles which, in terms of their home societies, are successful, and look around for something better. The growth of California-land, the eastward looking subculture which has appeared in California, is seen very much by those involved as a questioning of the American dream. People who have achieved the material success which American society holds in such high esteem have turned towards eastern mysticism in an endeavour to find something to fill the 'inner void' which all their material success did nothing to fill.

It seems to me that such resources could not have come about if there wasn't something about people which is uniquely personal in the sense of not being socially

determined. If all our affective lives were a product of our social environment we would be at a loss to explain why even a small minority of 'successful' people come to question socially defined criteria for success in life. If all affective responses were learned then feelings of achievement, of fulfillment, would follow logically from achieving success in socially defined ways. We would learn that feelings of fulfillment are appropriate when one achieves success, we would learn what constitutes success within our home community and once we had achieved success we would feel fulfillment - this would be true as a matter of logic if people were entirely social constructs, entirely products of their social environment. On such a view any deviance from the social norm would appear as a malfunction, a mental disorder. Any dissent from established convention would not be seen as a point of view to be looked at to see if it constituted a reason for social change, it would simply be an abberation to be treated - such reasoning might well be behind the Soviet tendancy to put dissidents into mental hospital for treatment, although the more cynical observer might simply suggest that this is simply an easy way for power hungry politicians to maintain the system in which they hold power.

This tendency to see deviance as illness requiring treatment has been seen clearly in the Western European attitude to homosexuality, an attitude which now seems to be changing. There still are people who regard homosexuality as a disorder to be treated, but we are slowly arriving at the realisation that the only problems which the majority of homosexuals have arise from the social unacceptability of their sexual preferences and from the need to live a lie, which is often the homosexual's only alternative to finding himself or herself denied employment and, in general being ostracized from 'straight' society. Homosexuality, I suggest, is a paradigm example of an area where someone's inner life, his uniquely personal feelings, lead him

into conflict with society. In our society the norm is heterosexuality and deviance from this norm is (still) discouraged in many ways, from employers reluctance to employ homosexuals to the feeling in some quarters that 'queer-bashing' is an acceptable passtime. But some people still are homosexual and many feel that 'coming out' is a necessity given the inner turmoil that being a 'closet queen' leads to.

Although we can explain homosexuality in physiological terms, in terms of hormone'imbalance' for instance, all this demonstrates is that some people's physiological make up deviates quite some way from what is the norm, from the mid-range as determined empirically. That such deviation from the physiological norm is something to be treated is an assertion which raises further issues. We don't think of treating tall or small people just because they deviate from the mean height of the population. It might be true that there is a close correlation between homosexuals, people whose sexual and emotional preferences is for people of their own sex, and people whose hormonal make up deviates from the norm in certain ways. But this in no way entails that homosexuality should be regarded as a disease to be treated. Before that step is taken argument needs to be formulated to show that homosexuality should be judged socially unacceptable and, if humanely possible, eradicated.

We are slowly arriving at the point, however, of realising that the traditional dislike of homosexuality which some cultures exhibit is not really justifiable, that whatever the reasons for a homosexual's preferences there is no good reason for taking sanctions against someone merely because of their homosexuality. What is being realised is that the image of the 'dirty pervert skulking in the shadows' is a myth, that the majority of homosexuals are perfectly normal, are within the acceptable norms, in virtually all respects except that

of sexual preference. The 'gay' community, in other words, constitutes no real threat to society which arises purely out of their homosexuality and so no action to eradicate homosexuality is appropriate. Rather than try to 'cure' homosexuals we should be attempting to eradicate fear which heterosexuals often have of homosexuality and try to get it seen as a matter of personal preference on which there is no pressing need for legislation.

In the campaign to change attitudes to homosexuality in our society, I suggest, we have an example of a group of people who, because their inner feelings on life lead them to go against convention, and because they believe that it is convention rather than themselves that is wrong, have managed to achieve very real objectives in terms of changing the law and, although as yet only partially, in terms of changing their public image. Homosexuals are still thought of by many as 'dirty perverts skulking in the shadows', but slowly, as homosexuals 'come out' more and more, people are beginning to see them as predominantly normal people, with hopes, fears and ambitions which most other people can recognise, who simply prefer sexual relations with their own, rather than with the opposite sex.

This account is probably too simplistic, a sociologist or psychologist would undoubtedly point out that many more factors are involved than I have mentioned. But this doesn't undermine my main contention which is that the existence of homosexuals and the fact that they have campaigned for their rights as citizens against established convention, arguing that homosexuality is best seen as a difference in preference rather than a disease, requires us to take seriously the idea that in peoples' inner lives there are factors which are <u>both</u> not to be seen as a matter of social conditioning <u>and</u> not to be seen as mental aberrations. In short there <u>is</u> something about people

which is personal as opposed to social which is important in our lives and which needs to be taken heed of. Homosexuality is a dramatic example of how the personal can conflict with the social but the rest of us may find ourselves in conflict with convention in less obvious ways. My earlier example of people who find that achieving a successful life-style (in socially defined terms) does not lead to fulfilment and set about finding something more meaningful to do are instances of this.

I should make a point of saying that in the tensions which arise between people's inner feelings about things and established convention there is no easy formula for deciding who is right. Homosexuality seems to be an issue where we should conclude that it is society's dislike of homosexuality which has no real rational basis. But we would surely want to say that someone with a tendency to take recourse to violence whenever frustrated should control himself for the social good. Thus I am not suggesting that the personal should always take precedence over the interpersonal. What I would say is that the social should take precedence over the personal in cases where a person 'doing his own thing' can be shown to be socially unacceptable and that social unacceptability can be shown to be based on sound reasoning. This amount to saying that where someone's personal proclivaties have no (rationally) unacceptable social consequences we have no justification for interfering with his activities.

An important area where, I believe, we need to admit that there is something uniquely personal about our affective responses if we are to understand the endeavour, is in artistic expression. In particular I want to say that there is a notion of 'rightness' in art which is, in part, a matter of the artist producing something which just does 'feel' right to him in terms of eliciting from him certain feelings which were what he intended to express, and which is not entirely achieved through

accordance with convention. It is difficult for me to deal adequately here with all the specialist aesthetic issues that are relevant - I am not an aesthetician. But although I admit that paintings, poems and pieces of music have a very rich symbolic meaning built up within historically recognisable and distinguishable traditions (so that the conventions of northern Indian music are different from those observed in western Europe) I want to argue here that there is also a strong personal element in art. This 'personal meaning', part of what I called earlier 'affective force' is what, I want to argue, establishes artistic expression as something more than just making feelings public by displaying inscriptions of symbols which (through interpersonal agreement within a form of life) are appropriate for expressing them. I am not trying to de-value the importance of the symbolic or the connotative (i.e. indexical) in art. I am suggesting that there is something more, some 'gut feeling' which involves an artist not only understanding relevant convention but also feeling that 'this' is the right area/medium in which to work. I want to say that it is something about some artists' 'gut feelings', their very personal affective responses to the world, that can give a unity, an integrity, to their work even when they have gone beyond convention. I cannot attempt to deal with problems about how far an artist can leave convention behind before his work becomes meaningless for the spectator relying on convention as a 'way-in' to something new, although it seems to me that in some cases at least it may be possible for someone without knowledge of relevant convention nevertheless to be drawn towards some area and that such basic and very personal responses can constitute someone's reasons for wanting to learn more about an area.

What I want to say is that art can be understood from two perspectives. From the point of view of the interpersonal art is a social phenomenon, the established rules of music in western Europe, for instance, are to be seen as delineating and formalising a whole area of musical ideas

which the relevant community has found suitable for its purposes. But, I want to say, there is something more in art. I want to say that the idea of a community of problem-solvers in the arts is a proper one, but that the problems are not fully stateable in interpersonal terms. It seems to me that one of the problems of the artist (as artist and not as commercial 'artist') must be that of self-expression, of producing not merely a work which, conventionally speaking, embodies no errors, but of producing somethind which really does 'feel' right. It should also be remembered that conventions in art do not constitute an algorithm for the production of works of art. A piece of music may accord with some set of conventions, but even if the accordance is total the composer's choice of notes still involves something personal - the rules don't tell him precisely what motifs, what voicings etc. to use where.

I believe that we must take some notion of things having the right 'feel' to them seriously if we are to make any sense of art advancing as opposed to its being wafted hither and thither on the capricious breezes of fashion and chance. My point is that every so often artists come along who do things 'wrong'. Now everyone who breaks convention has detractors, people who shout loudly about 'that' not being art. But a few of those who break the rules manage, in the course of doing so, to produce something that, whilst it terrifies the more conservative amongst their peers (and the critics), arouses such interest amongst the rest of their peers that, in time, the rules come to be re-written to include what was when it first appeared, dismissed as wrong by many.

I am arguing that unless we can give some account of what it is for something to feel right to an individual which does not make reference to conventions which define (publicly) correctness, then innovation in art cannot be represented as anything more than luck. If correctness is only a matter of following convention, then anyone beyond

convention is floundering, his finding something interesting to others is a matter of luck and his feelings that 'that's' right is empty, mere self-delusion. But it seems clear that some artists don't flounder, there are good examples from the field of jazz. Charlie Parker, the alto-saxophonist who established be-bop, with its incredibly tortuous chord progressions, unison themes and break-neck tempos, as part of the jazz mainstream, was greeted with disdain by many musicians and critics when he first appeared. Parker's tunes weren't tunes in the normal sense of tunes that people can whistle, their structure is very eccentric in terms of earlier jazz convention. His harmonies were based on popular songs, but the chords were altered to a point where the original tune would have sounded wrong over them. The technical skill and knowledge required to play a solo over the altered chords was so great that even now, forty years on, many musicians are happy to be able to just get round the chords of 'Donna Lee' without coming a cropper, and the thought of managing to improvise a solo with any extra quality over the chords seems to be a pipe-dream - Parker could do it but most others recognise themselves as also-rans and, when they play his tunes, handle them very much as he did (where sheer mechanical skill makes it possible). Parker broke revered rules, he played too fast, he 'resolved' his improvisation to odd notes (sometimes to the 11th degree of a chord where previous practice had for the most part regarded resolution to the fifth as adventurous enough) - he was widely accused of playing 'chinese music' by swing era musicians, but in the end it was be-bop that won the day.

Now in Parker's case convention undoubtedly played a role in his innovations. A famous story tells of how, the spring of 1937, at the Reno Club, Kansas, Parker got through the chords of 'I Got Rythm' the first time round fairly straight and then started getting ambitions. After making one chord substitution and ending up in a different key, Parker's knowledge failed him and he faltered and

stopped, Jo Jones, the famous Count Basie drummer, stopped playing and 'gonged him off' by throwing his top hi-hat symbol onto the stage in disgust. Over the next few years Parker made himself into a walking harmony text book until he never made mistakes about how to get back to his home base, but he used the text book information in his own way, as did a great many other be-boppers, notably the piano players.

Bud Powell and Thelonious Monk are two examples of pianists well versed in harmonic theory whose voicings of chords (particularly in Monk's case) are just wrong in terms of classical convention. Monk in particular suffered greatly from critical abuse and worked little in the early 50's although nowadays he is acknowledged as an important figure in the jazz tradition's movement away from dependance on classical harmony, with his 'wrong' notes and decidedly imaginative approach to voicing and altering chords (for instance including both the major and the minor third in 'blues' chords - this wasn't uncommon in earlier jazz, but whereas his predecessors played the 'correct' third in the first octave and the 'blues' third a major seventh higher, Monk often plays the two notes a semi-tone apart, producing a strong dischord).

What I want to say, particularly about Monk who found himself out on a limb for quite a while just because of his 'wrongness', is that we can't just explain innovative music in terms of random floundering. If a jazz fan listens to Monk's early recordings today it requires an effort of the imagination to get anywhere near understanding why he was reviled by so many for so long. The music has a recognisable 'Monkish' style (a style which many others have drawn on but which Monk created and only he has mastered), there are no 'flounderings', in fact the early recordings are, if anything, tighter, more intense than his later music.

Here we have two men, Parker and Monk, who broke rules and were critically abused, but whose music is now accepted as part of jazz's historical development. And in neither case, and this is especially true for Monk whose transgressions against convention were always greater than Parker's, is there any sign that what they played had any less unity or integrity about it for all that it was not played in accordance with generally accepted rules.

It is true that in Parker's case there is some justification for suggesting that he worked from established theory, gradually altering it until he defined an area of music in which he wanted to operate. But even this doesn't undermine my contention that there must have been some personal, as opposed to interpersonal notion of 'rightness' being used. Even if Parker was experimenting by constructing alternative theories (and he almost certainly wasn't approaching the problem that systematically - he was a professional saxophone player and still in his late teens at the time) this couldn't explain how he ended up where he did. All of his alternative theories would, from the point of view of convention be of equal status - insofar as they disagreed with established convention they would be wrong. Which theory to adopt, which innovations to introduce must, ultimately, have been decided on the basis of what sounded right to Parker. Once be-bop was established the question of what constituted be-bop playing was decided by reference to conventions which were derived largely by describing how Parker played (people still learn to play be-bop by learning to play, and analysing, Parker's recorded solos). But Parker's decisions couldn't be made by reference to convention, he had to look within himself and decide what sounded right to him.

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Since the late 1950's and the move away from chord progressions as a basis for jazz improvisation this

idea of playing what is personal and relying on convention as little as possible has led to the development of what, in England, is called 'the new music'. To what degree convention can be jettisoned in musical improvisation is, as I have said, a question I cannot deal with, but I think it must be admitted that, in some cases at least, people can operate outside convention but still have a sense of rightness in their art. This sense of 'rightness' cannot, it should be clear, be at all conventional. I contend that it is in feel -ings of rightness, in the emotional passivities of our inner lives, in the ways in which we just do respond to the world because of who we are, that we can explain how some people can find their way alone, without convention, to new modes of expression.

If there was no substance to this idea of personal responses which can establish the rightness of something for a particular person, then we would have to conclude that all innovations were the chance results of random floundering and the innovators who get their ideas accepted after years of effort would be seen as irration -al social deviants who were lucky in that the results of their flounderings just happened to catch on. There would be no room for taking seriously accounts such as jazz musicians often give of the massive impact which someone playing outside established rules can have in terms of the listener suddenly realising that 'this is it' so that he goes off and applies himself to mastering the new idiom. It seems clear to me that a refusal to acknowledge the importance of very personal feelings and emotions in art is simply an insistence on viewing art as a social phenomenon and ignoring the fact that artistic endeavour can have a significance for the person engaged in it which is not to be explained in terms of the interpersonal.

By now there will be those who are confident that I have been demonstrating the fallaciousness of my own

position. In talking about a personal notion of rightness that doesn't depend on publicly established criteria I might seem to have put myself in an extremely vulnerable position. The objection which comes to mind appears in paragraph 258 of Philosophical Investigations. At the end of the private language argument Wittgenstein wrote:

> "But in the present case I have no criterion of correctness. One would like to say: whatever is going to seem right to me is right. And that only means that here we can't talk about 'right'."

Now I've already discussed the private language argument at length so I will leave out the detail here. My main contention is that criteria of rightness need not be a matter of accordance with interpersonally constituted rules. Very early in this thesis I argued that unless some things had natural (i.e. unlearned) significance for us it would be logically impossible for a baby born without linguistic skills to acquire them. This natural significance must consist in some things-in-the-world eliciting, as a matter of contingent fact, certain responses from us. For instance if hunger and its satisfaction are naturally significant, are ways for other things to acquire significance (e.g. food gaining significance as that-which-satisfies-hunger), then what is the case is that we naturally respond to hunger being satisfied, we just do find such events significant. What I argued was that these natural responses to the world give us a very basic notion of rightness, a natural basis on which to make sameness judgements. Such a natural basis, I argued, is a logical prerequisite for initiation into the more sophisticated world of socially defined notions of correctness. It seems to me, then, that the private language argument cannot be a way of attacking my account of a very personal notion of rightness in the arts. The private language argument did not invalidate my suggestion that some things must be naturally significant for us. That some things have a natural significance in terms of eliciting affective responses from us cannot, therefore, be shown to be not

the case by invocation of Wittgenstein's argument.

Just before his statement of the private language argument Wittgenstain was concerned to show that sensation language is not acquired by learning to (for instance) label a clear and distinguishable sensation of pain with the word 'pain'. He wanted instead to say that 'pain language' is learnt by replacing natural pain bahaviour, like crying, with linguistic behaviour, like saying, "It hurts." The main purpose of the private language is as a way of establishing that 'pain' cannot be regarded as a referring word in the same sense as 'hat' is a referring word. It seems to me, as I make clear in earlier discussion, that Wittgenstein was right about this, and it also seems to me that aesthetic language must be dealt with in a similar way to sensation language.

Just as we couldn't in principle, acquire sensation language unless we had natural sensation-behaviour, unless we naturally responded to (e.g.) pain in certain characteristic ways, I want to suggest that the existence of aesthetic language is only possible because there are certain natural aesthetic responses which are replaced by appropriate linguistic behaviour. I contend that we can only talk about aesthetic experience, about being moved emotionally by a work of art, because we can recognise the behavioural 'symptoms' of such experience. We recognise that in some contexts people just 'aren't there' - when they're 'lost' in a painting, or a book or a musical performance. The 'symptoms' are well known, it's hard to get their attention, they tend to be resentful towards, to snap at, the person who breaks their concentration.

The main difference between sensation and aesthetic experience is that for a sensation like pain we can give a specification of at least some of its causes - in normal circumstances (i.e. no local anaesthetics, no hypnotic

suggestions etc.) a pin prick, or putting a hand on some thing hot, leads to pain. But aesthetic experience doesn't seem to be like that - one person can be totally fascinated by a work of art which another just 'sees' nothing in. But this isn't a serious problem, we are all aware that one man's meat is another man's poison, aesthetic experience isn't essentially private, almost everybody knows what it is, it's just that what elicits an aesthetic response from one person may leave another cold.

I hope that I have at least established that the idea of a uniquely personal notion of rightness in art is both coherent and has a place in discussion of artistic innovation. I must admit that my discussion here has failed to deal with much that is important, for instance the relationship between art seen as a very personal endeavour in which the artist is concerned with self expression and art seen as a social phenomenon where a work of art uses convention (to some extent at least) and is a saleable commodity. I will be saying a little about this in later discussion, but not enough to satisfy an aesthetician. I cannot remedy this, I have no room here for such a discussion, my concern is only to establish that there is a domain of the personal which is not subsumable under the interpersonal and I believe that I have said enough to do this, thus further discussion of aesthetics would be inappropriate to my purposes here besides taking me into an area in which others have much more competence than I can claim.

I have, I believe, established the distinctness of the personal from the interpersonal (as well as from the inanimate). But once again I must emphasise that the distinctness of the four problem-domains is more formal than actual in the sense that although we can formally distinguish the different approaches and although we can isolate 'central areas' of problems which seem clearly to be of one sort or another we also have grey areas where

problems seem to fall between domains. The personal cannot be just held apart from the animate and the interpersonal.Problems with our inner lives are not dealt with by the approach(es) which the life sciences have adopted as these ways of looking are geared to deal with problems of the animate where the subject of experience/ reacting mechanism distinction plays no crucial role. But it might be that, as Jung's 'Man and his Symbols' might be taken to suggest, human nature includes certain 'aesthetic dispositions'. Thus the personal might, partly, involve giving an account of the nature of human consciousness and, if we begin to take the idea that some non-human animals are subjects of experience seriously, the personal might begin to appear closer to the animate than to the interpersonal in that we might conclude that both the animate and the personal deal primarily with what is natural (i.e. non-conventional) but that the animate deals only with organisms as reacting mechanisms whereas the personal makes the further assumption that the organism is also a subject of experience. All this is speculative, but the speculation is far from idle. What I am really trying to show is that the grey areas where problems seem to be related to more than one domain (seem to share characteristics with problems that clearly fall within different domains) constitute evidence that the different ways of looking which have grown up historically are all incomplete. Each domain has a central area of problems which we have come, through trial and error, to tackle differently. But the problem-solving techniques which seem appropriate in central areas, where the presuppositions built into a paradigm seem unobjectionable, themselves become problematic in the grey areas.

We can characterise human beings from the point of view of physics, a discipline which evolved in dealing with problems of the inanimate, and not say anything about life, social relations or our inner lives. The animate says more about human beings as living organisms with certain natural tendencies, but misses out the conventionality

of our social life and our being subjects of experience in any full sense. The interpersonal sees us as cogs in the social machine but fails, so far, to relate what it describes to human nature. Finally the personal relates to us as subjects of experience, experience mediated through our socially acquired ways of looking, through our shared human nature as subjects of experience and through each individual's personal quirks. But the domain of the personal is very much underpopulated by theorists and our theoretical understanding of the problems of this area, and their relations with other sorts of problem are poorly understood.

My contention is that there are four basic sets of presuppositions we currently make about the 'things' we find in the world, presuppositions built into different families of ways of looking which are designed to function as problem solvers in particular areas. The four 'classes of thing' presupposed by our current modes of understanding are (roughly), physical objects, living things, conscious agents and social beings. These are not mutually exclusive classes. Everything can be described as a physical object, if incompletely in many cases. Similarly all social beings are living things, but not all living things are social (in a sense of social which implies 'conventionally defined') beings. And again conscious agents are a sub-set of living things, but we're unsure about how big a sub-set. Sorting out the problems we have trouble with given our present level of understanding may quite possibly require a more subtle approach, a different set of paradigms, and those paradigms might re-define problems in a way which obliterate the distinctions I have drawn up between the different problem-domains.

Nevertheless it seems to me that as things stand we have four areas of problems, the animate, the inanimate, the interpersonal and the personal which, as far as we

can see, need different sorts of solutions. Of the four the domain of the personal has been most neglected. The physical sciences, the life sciences and the social sciences (and, as I have said, I would locate the majority of psychology this century somewhere between the animate and the interpersonal) have all received much attention. Except for artists who have always been aware of something non-social in their art, and psychoanalysts who have serious technical problems with their theory, little effort has been really put into tackling the problems of the personal.

The failure of psychology to engage with the problems of the personal is particularly surprising. It might be thought that giving an account of our inner lives which would allow us to handle the problems of the personal would be a task which psychology would see as central. But psychologists, especially in England and the United States, have shied away from this task, concerning themselves with an attempt to produce a species of psychology which apes, as far as possible, the concepts and procedures of physics. This has given us two movements the status of which are still being debated - behaviourism has flourished despite its theoretical basis having been shown to be incoherent and I.Q. testing is still a rich industry even though an answer to 'What do I.Q. tests measure?' almost certainly wouldn't be able to justify mentioning anything like 'an innate and invariant characteristic,' except indirectly.

The one area in which psychologists (and there are those who would with hold that label) have actually tackled the inner lives of people in a way designed to help us come to grips with our emotions and irrational impulses is in psychoanalysis. I should quickly point out that this suggestion that psychoanalysis is the only branch of psychology which has seriously set out to help make our inner lives more comprehensible to us in no

way commits me to asserting that any particular psychoanalytic theory is correct in terms of giving us true descriptions of the state of mind of a patient under analysis. A number of problems exist with current theory, not the least of which is the built-in irrefutability which Popper objected to. There is also the suspicion that, because the analyst is usually a person who first voice's the patients 'unconscious beliefs' what really goes on is a process whereby the analyst releases stress by offering the patient an explicit account of putative 'unconscious beliefs' which the patient identifies with and then rejects, or else a process in which the analyst indoctrinates the patient with a set of beliefs which, because they enable him to function more effectively, the patient clutches at like a drowning man. Psychoanalysts would violently reject such descriptions of what analysis involves, but the fact remains that they cannot establish convincingly that their own account is more correct. This is a problem for psychoanalysts, but not one for me to attempt to deal with here. My only point is that psychoanalysis seems to be the one area of psychology that is attempting seriously to engage with the basic problems of the personal. If the current concepts and theories in psycho-analysis aren't up to the job then new accounts will have to be devised - after all changes of paradigm are an important way in which traditions of enquiry work towards solution of their chosen problems, and psychoanalysis is a very young tradition.

The other areas of study which deal with people seem more concerned with what is common between human beings rather than what is personal. Learning theory is preoccupied with specifying what it is about human beings which enables us to become initiated into the various modes of life within society, rather than with what makes people have different preferences in life - and learning theory isn't to be blamed for this, such questions are important. Aesthetics which seemed for a

long time to be primarily concerned with giving criteria on what did or did not constitute good art now seems to be moving more towards an account of the personal in art with the recent growth in interest in the idea that what is central in the arts is aesthetic experience.

Even though the personal mode of understanding is far less developed than then others it is, I believe, of very great importance. In recent years we in Great Britain have come to be very wary of planners and architects who, soon after World War 2, began to bring new ideas,backed up with elaborate aesthetic , engineering and economic arguments, to the field of public building. These new 'master builders' gave us high rise flats which won international awards and in which people just couldn't live and they, incidentally, produced a multitude of new design features which people not only didn't like, they were also health hazards. But I'm not really interested in the architect's design faults. I'm really interested in the evidence that even without the admitted design faults people would still have hated high-rise flats. It seems that what was really wrong with the high-rise flats wasn't anything to do with designers errors that could have been put right, but the fact that a whole dimension was missing from the design effort. That this is so is held by some archtects now.

Nowadays many architects of housing schemes begin with consumer research, by discovering what sort of accomodation people really want. In other words it has been realised that houses are not just parts of elegant show estates that look good as we pass by, houses are where people live and a good house is one in which people like living - the question of 'What sort of house?' is being looked at more and more from the perspective of the personal.

In general, I suggest, we must accept that the personal

is much more important in life than many of our ways of going about things would suggest. A great many firms, notably 'Phillips' in Holland, have discovered that although, in terms of measurements like time and motion studies, a conveyor belt style of production line would appear to be more efficient, in fact production is higher, through wastage and absenteeism being lower, when one worker, or a small group, assembles an item from start to finish. Partly this improvement can be explained in terms of faulty items being easily traced back to source, but there seems to be a case for saying that the improvement in attendance arises from the fact that the employees get more job satisfaction out of doing something that is a visible achievement, like putting together a complete tape recorder, than out of just putting one component on a machine which is finished as it reaches the end of the line. At any rate this seems to be one instance where a consideration of the feelings of people has led to a re-appraisal of the notion of efficiency as it is interpreted in the light of final production. Saab in Sweden have successfully adopted this approach with motor cars, perhaps B.L. and Ford should consider that such a change might improve overall productivity not by increasing the number of cars per hour produced but by reducing the number of hours lost due to disputes which may have, as part of the root cause, the tension which builds up in the frustrated production line worker. Such ideas are new and as yet not held to be proven, but the idea that we can have happier industrial relations by simple adapting work to give the worker some sort of personal fulfilment must be taken seriously.

In education we tend too much to negate the personal. In the growth of use of behaviour modification we have, I believe, a tendency for teachers to regard themselves as technicians manipulating children into adopting the 'right' attitudes, into using correct procedures. There is also a tendency for education to be seen more and more as an agency of man-power planning, training pupils

in skills required for the available jobs. The pursuit of excellence is so often identified with the production of tomorrow's scientists and leaders that we rarely bother to stop and wonder whether, for instance, 'this' pupil, who's good at maths and physics, really wants to be a physicist. A large number of undergraduates 'drop out' of courses that just don't interest them, and quite a lot more plod through, get a degree, and spend a lot of years doing a job they're not interested in.

My suggestion is that in this respect the 'manpower planning' lobby is asking teachers to ignore their pupils as people and instead regard them as potential 'cogs' of various sorts, to be shaped into the right specification and then passed on for insertion into the industrial machine. It seems to me, however, that teachers have a duty to engage with their pupils as people if for no other reason than that teachers take on a job which is about passing on knowledge and fostering understanding and that there are many things that a teacher must know about his pupils as people if he is to get anywhere in that job. Who exudes confidence as a mask to hide inability? Who has ability but no confidence? Who needs threatening with dire happenings before anything will get done? Who's timid and must be handled gently? If a teacher doesn't know these things a million things can go wrong. A personal understanding of his pupils must be one of a teacher's main tools as he seeks to get work done, to propagate understanding. This personal engagement with pupils is not easy, it can create problems - what do you tell a pupil who's aspirations outstrip his abilities? But the main problem it creates in the face of manpower planning is that if pupils are given a deeper understanding of themselves and what they feel about life, then maybe they won't like the idea of taking up the niches in life offered them. It is interesting to speculate on whether the current higher education cuts are, in part, a consequence of higher education 'failing to deliver the goods' in terms of turning out the required streams

of technologists and managers. Thinking young people of the late sixties and early seventies, it seems, weren't so interested in questions about how to get a well paid job as they were in more fundamental questions like, "Why should the system work like this?"

We may believe, even given some of the excesses which students committed in those days, that the committment and the debate which went on around the world's universities turned out a generation of people who thought about difficult problems for themselves. This, to some educationalists, would seem like the sort of thing education is about. But more than one politician has looked askance at the growth of the humanities whilst the physical science and engineering faculties fared less well.

It does seem at least plausible to suggest that it is in the acknowledgement of people as having a uniquely personal aspect which is important, as opposed to viewing people as so much potential manpower, that distinguishes educators from trainers. The trainer looks at his pupil from the point of view of which of a range of stereotypes it will be possible to transform that pupil into. The educator, on the other hand, looks at the pupil as a person who is to be helped to engage with the world in all its aspects, to acquire some understanding of it and to take responsibility for his own actions in it. On this view it can be no part of an educator's job to guarantee a certain composition of output - the pupil must be given the relevant information and, where possible, understanding and then must make up his own mind. Available jobs must undoubtedly be one factor in anyone's decision about his life style and schools must provide such information, but the pupil, not the teacher must choose jobs <u>and</u> the school must surely inculcate in the pupil an understanding that he might find that there are things other than social status, money and material possessions that matter. I will return to this subject in later discussion.

In arts education, in drama classes, in sex education there could be and sometimes are elements of education in the personal mode, pupils being encouraged to examine their own feelings. Pupils can also be encouraged to examine conflicts between personal feelings and the demands made by society. A straight forward example here is the kid who wants to hold a conversation when the teacher wants to teach - my solution was usually to ask the pupil if he thought it was reasonable for him to stop 20-odd others learning just because he wanted to talk, and it usually worked. My point is that understanding the personal is important in that we all have to live with ourselves and live in society, we have to know when to withdraw and quieten down, or when to seek out others. We have to come to grips with compromise between the selfish fulfilment of our own desires and fitting in with others and, it seems to me, such compromise which has to be made in so many spheres, from work to marriage, is likely to be more successfully achieved if done out of knowledge instead of being reached uneasily after a career has been embarked on or a wedding held.

The value of understanding the personal, then derives from the fact that, for many people, their inner lives are closed books, and yet the effects that hopes and fears, loves and hates, etc., have on our lives is undeniable. Only by knowing ourselves can we do anything about avoiding the problems that can arise. Only by understanding others as subjects of experience with complex inner lives can we handle our interactions with them successfully - the impersonal manipulator is in trouble once the manipulatee realises what's been going on. The personal is concerned with such knowledge but it is not merely by learning a theoretical language that systematically describes mind that we can acquire it. Engagement with the arts as a mode of expression, of self exploration, is another way which many have found both compelling and fruitful.

I am not claiming here to have given any definitive account of our inner lives, of alienation, of homosexuality or of artistic creativity. All I have attempted to show is that we cannot deal with all the problems we have with these phenomenon solely by using the approaches generated in engagement with problems in the domain of the inanimate, animate and interpersonal. I believe that I have achieved this objective and have shown that there is a distinct and important area of problems properly to be called the domain of the personal. It is fairly clear that our theoretical understanding of the personal is not very well developed at the present time, but, for reasons already given, it seems to me that this only shows that we have neglected an important area of study.

It should be remembered that the distinctness of the inanimate, animate, interpersonal and personal is more a matter of the way families of disciplines have grown apart in terms of slowly coming to adopt paradigms based on different presuppositions about how the world is as they engage with the problems that interest them. The distinctness of the domains consists in the fact that in engagement with a wide variety of basic problems disciplines have formed different 'families' each family loosely based on different ontological presuppositions, the different families seeing their problems differently - as problems of different sorts. Of the four domains the personal has less theoretical activity in it than the others, and very few problems have been given acceptable theoretical solutions. The distinctness of the personal, however, is demonstrated simply by showing that there are problems with which paradigms/theories generated in the other domains cannot deal with adequately.

That the models associated with the problems of the different domains do tell us about how things are in the world to some degree is demonstrated by the

fact that the model/paradigm/theory complexes generated in each area do function well in the case of a large central area of problems (the personal being something of an odd-man-out here, suggesting that we have very little theoretical understanding of mind). That these models are incomplete is demonstrated by the difficulties of the grey areas, of problems that seem not to be adequately dealt with by any of our current ways of looking.

The main problem that remains for me now is that of relating the problem domains of different (historically distinct) disciplines to my four domains. Whilst some disciplines fall definitively in one problem domain (eg. physics and the inanimate), others seem to have to deal with problems from more than one area. Geography, for instance, attempts to deal with problems involving relations between entities normally dealt with in different ways - geology falls into the inanimate, economic geography draws on the inanimate, animate and interpersonal, and physical geography, insofar as it includes reference to land use, must talk in terms of the animate and the interpersonal although primarily concerned with problems of the inanimate.

I will deal with such problems after my next section. There I will say a little more about the position of those areas of thought which have traditionally claimed absolute status.

Absolutism?

The question mark here is unavoidable. We simply don't know whether absolutist 'solutions' to life's problems, such as those offered by the various religions, are right or not, and the metaphysical absolutists cannot claim to have come up with any solutions at all until they establish criteria for absolute truth, a possibility with (as I suggested earlier) little probability of occurrence. Nevertheless we must maintain absolutism as a very different approach to understanding how things are, one which is concerned with the problem of how things are from a perspective which demands certainty in its solutions. We must hold on to absolutism for two reasons: first it makes no sense to deny the possibility of an absolute, and second, the endeavours of metaphysicians like Findlay simply are absolutist and cannot be reconceived from the perspective of rational piecemealism without serious misrepresentation. A third reason, relating to religous claims, might be that although such claims are unsupportable publicly, and are therefore uncompelling to anyone who wishes to believe only what he has good reasons to believe (i.e. reasons for believing 'that S' which are also reasons why S is likely to be true) to refuse to accord absolute status to such claims (whether we believe them or not) would be to rob them of a very important part of their significance. I will deal with the two cases separately, first the absolutist metaphysicians and then the claims of the religous absolutists.

The case of the metaphysicians is relatively easy to deal with. If a metaphysician asserts that it is possible to acquire absolute knowledge, then he is simply incapable of justifying his assertion - this follows from Findlays point that the only way to demonstrate that possibility is to specify such knowledge. Insofar as we have no such specification at present the appropriate attitude for a metaphysician interested in absolutism is that of saying something like ' I'm not sure that we can, or cannot acquire

absolute knowledge - I am concerned, however, with investigating the possibility whilst fully accepting that whilst I might be on the right track I equally might be wrong and wasting my time. In other words such a metaphysician would be in a position of uncertainty about whether his search for absolute certainty might prove fruitful. Such an endeavour might properly be called absolutist, (in a strong sense) and can exist side by side with the endeavours which have adopted a more piecemeal approach. It cannot, however, claim any special status for itself until such time as it specifies criteria for absolute truth- only then would it be able to assert that a 'true' understanding of things-in-themselves is possible and that a more piecemeal understanding, such as we get from the inanimate, animate, interpersonal and personal, is a second rate sort of understanding. Thus it is coherent to assert that there is a separate tradition of enquiry, properly to be called absolutism, the fundamental concern of which is to investigate the possibility of our acquiring absolute knowledge. It is <u>not</u> justifiable to claim that absolutism is concerned with the discovery of absolute truth as this assumes the possibility and that, as Findlay points out, is an improper assumption. I personally would suggest, for reasons given earlier, that we should value the non-absolutist modes of understanding, ways of looking which do enable us to deal with problems, above absolutism which, despite its grandiose promises and long history, has little proven power as regards problem solving. But absolutism might, after all, come through, and give us a better understanding (in some sense of better to be elucidated by the absolutists), and so it would be wrong to ignore absolutism completely, we must simply demote it until such times as it 'delivers the goods.'

The case of religion is both more complex and more emotive. It is obvious that it is perfectly proper to view religion from the non-absolutists standpoints

of both the interpersonal and the personal.

Organized religions are social institutions and are properly to be described as such. An organization like the Catholic church (for instance) wields political power and has a history which might lead it to be characterised in ways which emphasise such things as the fact that for a long time mediaeval Popes were people after the secular power the church wielded as opposed to being religious men, or the political nature of the Inquisitions, or the silence of Pius 13 in the face of Nazi atrocities having political origins, or the current Pope's decision not to back left wing priests in South America as being more a matter of safeguarding the churches political position in that part of the world rather than a religious decision. Catholicism is not alone in being embarrassed by a grubby political history - in general religious belief has been used as a source of political,power by most major religions,

If we ignore the social role of organised religion and instead look at such things as acts of faith and religious experience we have switched from the interpersonal to the personal. Someone's being a believer is a fact about that person, a fact which embodies a reference to an emotional committment which that person has to certain beliefs, such as belief in the existence of God as a spiritual principle if not as a divine person, or else a belief in the sanctity, the absolute status, of certain principles (Buddhism lacks the former but embodies the latter). It is interesting to note that in the B.B.C. series 'The Long Search' it was the aspect of personal commitment that was emphasised both by the presenter, Ronald Ayres, and most of the priests/monks interviewed, although in many cases the personal commitment leads to the recognition of social duties - one can cite sister Theresa's work in India and the

Salvation Army as examples of comittment to Christianity leading to involvement with social problems.

It is fairly obvious that an explanation of at least some people's adoption of religious beliefs is possible, in terms of socialization (which,of course, takes us back to the interpersonal and raises once again problems about the relationships between the personal and the interpersonal), and, in terms of the personal, religion as a psychological 'crutch.' Many people would dismiss religion as either a social phenomena or as expressive, but equally a religious person, whilst he might admit that some elements in religion, religious belief and religious practice are properly to be characterised in such terms, would claim that the really important elements in religion cannot be so dealt with.

Again I am here faced with very complex issues which I cannot deal with adequately. What I can do is to acknowledge that many religious people stress the absolutist content of their beliefs, a content supposedly derived through revelation and/or intuition. I have already made the crucial observation here which is that although the intuitions of mystics may be veridical neither we nor the mystics can justify any claim to know that they are. A putative intuition which cannot be independently shown to be true, and religious intuitions/revelations which seem incapable of being independantly supported, must remain objects of faith rather than knowledge (as Kierkegaard argued God must in 'Philosophical Fragments') and this faith is something that seems to have to be explained in non-absolutist terms, otherwise the faith would be claimed to be elicited or caused by an existent God and would simply lead back to the knowledge claim that was the original source of the problem. Nevertheless it might be that I am wrong here, that to deny that religious faith involves more than can be explained in terms of the personal (and/or the interpersonal) would be to deny an absolute. In 'Ascent to the Absolute' Findlay

questions the coherence of the notion of a personalized God such as Islam and Christianity use, but he does this because he is attempting to specify an Absolute which is a unity of which all particulars are merely aspects, or rather he is investigating the possibility of specifying such an Absolute. If Findlay was successful in his endeavour he would undermine the notion of a personalised God, but not the wider notion of some sort of 'God-Hood' which is found in Hinduism and Buddhism. So even the absolutist metaphysicians do not, in principle, undermine the possibility that religious beliefs (of some sort) may be true.

Faced with this situation it seems to me that we must not attempt to deny anyone's religious beliefs, but what we must deny is the often claimed 'right' of religious groups to follow their beliefs even when those beliefs are in conflict with justified non-absolutist social principles. If some religious group can justify its beliefs in non-absolutist terms then a debate can take place about whether the social rules with which they conflict should be changed. If some religious group could show, by metaphysical argument, that their beliefs were absolutely true, then any conflicting non-absolutist rules would be shown to be wrong, but, of course, we don't even know, until they do it, if this is even possible. Thus, it seems to me, we must allow people their religious beliefs for so long as they don't lead to conflict with interpersonally constituted rules, but must deny them the right to flout such rules unless they can, in some way, (either absolutist or non-absolutist), show the rules to be wrong. The reason for this is that it seems prudent to allow people the maximum freedom of choice possible in organising their lives, but imprudent to allow them to disrupt society on the basis of assertions about what is right or wrong which they simply cannot (as a matter of fact, not in principle,) justify publicly.

My position on absolutism, then, is that it is perfectly coherent to regard absolutism as an endeavour that is concerned with investigating the possibility of acquiring absolute knowledge. What is also the case, however, is that we cannot accept any particular claim to absolute truth - as things stand such a claim cannot be justified. So we must allow religious people the right to have faith that 'this or 'that' is absolutely true on the grounds that they might be right, but we must deny them the right to act in accordance with their beliefs in situations where this brings them in conflict with socially constituted and justified non-absolutist rules on the grounds that they might be wrong. Only if the religious beliefs can be justified publicly and non-absolutist social rules shown not to be justified can we reasonably allow religion to win the day.

The General Domains and the Disciplines.

The physical sciences clearly handle a great many problems which fall in the domain of the inanimate, but, when dealing with the problems of (e.g.) molecular biology, fail to say anything useful about consciousness or the living/not living distinction. The life sciences, from molecular biology and physiology to studies of animal and plant populations and habitats and studies of animal behaviour, deal with problems in the domain of the animate whilst ignoring problems involving conventionality and consciousness. The social sciences, political science and moral discourse (etc.), deal with problems arising out of the conventionality of our social institutions, those which constitute the domain of the interpersonal. but fail to engage with the problems of our inner lives. Psycho-analysis has engaged with these 'inner' problems which constitute the domain of the personal, though its success so far is limited, as is that of the wider field of psychiatric theory. But there seems to be something in the suggestion that engagement in artistic endeavour can, if approached correctly, become a voyage of self discovery in which the production of a work can be a way of making accessible (to himself and others) the formerly poorly perceived workings of the artist's inner life. Aesthetics, as it engages with the problems of aesthetic experience, might well cast some light on such problems.

Aesthetics, however, is an example of a discipline that must attempt to relate problems from more than one of the more general domains. In talking about aesthetic experience and artistic creativity, aesthetics is looking at problems which seem to require us to talk about people's inner lives. Thus here aesthetics is working in the domain of the personal. But works of art are also symbolic to at least some extent, artists draw on established convention even when innovating - innovation isn't a matter of producing something totally

disjoint from all that has gone before. When approaching art from this point of view aesthetics is looking at problems from the domain of the interpersonal. Finally, recurrent symbols appearing in the art of cultures between which there has been little or no contact might lead us to think in terms of an aesthetic element in human nature, and such problems, as I have already remarked, seem to fall somewhere between the personal and the animate given our present lack of understanding of such issues.

The question which must arise, given the existence of disciplines whose problem-domains cut across my four main domains, is whether my classification has anything really compelling about it, or whether it's one amongst many possible arbitrary classifications. In other words, could we produce some other set of distinctions by choosing different disciplines as central cases, so that aesthetics and psychology, say, would define the more fundamental domains and physics and biology would span domains. I can't imagine what an alternative classification might look like (I don't think Hirst's Forms of Knowledge/Modes of Experience would do), but this isn't an acceptable response to the question. The central question is not about whether my classification is coherent (which, formally speaking, I believe it is) but about why my classification should be taken as a more accurate reflection of the state of our understanding than any number of other equally coherent but completely arbitrary classifications.

My reply is that the distinctions I have drawn between the inanimate, animate, interpersonal and personal do, in fact, reflect the general state of our understanding as it is now. There do seem to be problems which fall centrally into different domains. And these problems seem to be formally distinguishable in terms of the different presuppositions that, as our understanding has evolved, we have built into the paradigms

used by disciplines as they try to solve the particular (limited) area of problems each discipline has historically come to focus on.

Physics, as I showed earlier, uses an approach to the world that presupposes that the things it deals with are inanimate objects 'linked' by mechanistic causality, it generally ignores problems arising from life, consciousness and conventionality.

The special problems of the life sciences are simply unspecifiable without life being assumed. Life scientists, even when using concepts from physics, must also relate particular features of the organism (its reproductive method, its limbs) to the organism's 'life-style' and environment in terms of their function and degree of adaptivity to environment, feeding etc. This functionalist part of the life sciences is appropriate only because what are being dealt with are living things. In describing a living organism we are not merely describing inanimate things which, through simple mechanistic causality, have come to have certain physical characteristics or properties, we are describing living and reproducing organisms which, over long evolution, have become adapted to certain modes of life.

The life sciences, however, fail to deal with problems of conventionality, of the interpersonal, problems which are the concern of sociology, of law and moral discourse and of politics. The presupposition basic to seeing the distinctness of the problems of the interpersonal is that some of the rules of (at least) human social organisation are neither physical law (in the sense used in physics), nor 'natural law' in the sense of being dictated by instinct, but are, instead, arrived at through inter-subjective agreement and, as such, are open to being changed. Whatever the weakness of a purely extensional sociology as an approach to the problem of social change, and however unclear the inter-relations between instinct and convention

(the nature/nurture issue) it is clear that some problems just are interpersonal in this sense.

Finally there are the problems which are only distinguishable on the presupposition that what is being looked at is a subject of experience, a conscious agent whose observable behaviour can only be properly dealt with by reference to states of mind, desires, feelings etc. Again here we have problems arising from the inter-relatedness of human nature/human social institutions and mind, but this doesn't alter the fact that there are some problems, such as neuroses and the problems of artistic creativity, which seem clearly to fall within the domain of the personal as defined.

So there are clearly areas of problems which fall within the domains of the inanimate, animate, interpersonal and personal as defined and there are disciplines which, over their histories, have come to focus centrally on problems from one domain. And these disciplines, which keep to problems in their 'home' domain, have things easier than disciplines which span domains, simply because they deal with homogeneous bodies of problems, problems which are all amenable to solution under closely related paradigms. Thus a discipline like physics, working almost exclusively in the domain of the animate (with odd aberrations like physicalist accounts of mind), finds it relatively easy to maintain concensus on a basic paradigm amongst practitioners in its various fields. Aesthetics, on the other hand, has massive problems due to the ambiguity of art which is <u>both</u> personal expression <u>and</u> part of an interpersonally constituted cultural tradition. As different aestheticians put more stress on first the social nature of the forms of art and then the more personal aspects of art, like aesthetic experience, aesthetics tends to 'see-saw' between formalism and the more elusive, yet somehow richer, approach of the phenomenologists. It is the way disciplines within my general domains seem to encounter less problems

in arriving at appropriate paradigms than those that span domains that leads to me to claim that my classification of problem domains has descriptive as well as formal validity. My contention is that every discipline that spans domains either splits into sub-disciplines which operate within different domains or else encounters special problems which arise as the discipline attempts to relate problems (and solutions) from different domains.

There are, of course, disciplines which have conceptual problems which result from other influences. The persistence of extensional sociology and psychology is an example of how disciplines dealing with problems from other domains still hope to emulate the success of physics by adopting as far as possible the concepts and techniques which physics has found appropriate for dealing with problems from the domain of the inanimate. I think that it is fairly obvious that both sociology and psychology, in most areas at least, engage with problems involving people, as constitutive of social institutions and as conscious agents. And this would suggest that a purely extensional way of looking is likely to miss out important features of such problems. As to why sociologists and (some) psychologists insist on imitating the physical sciences to an unjustifiable degree, managing to give severely distorted pictures of human life in the process, I suggest that the question is more a question for sociology than for philosophy. One bit of speculation I cannot resist, though, is to the effect that the urge to look 'scientific' is tied to social and political prestige and that looking 'scientific' is a way of attracting funds for research. A good example here is the way that behaviourism, with an incoherent body of theory which can hardly have been said to improve our understanding of learning (other than negatively), nevertheless did a lot of good for pyschology by dressing it up as almost a physical science and putting it in a laboratory. This required, and got,

research funds and improved the image and prestige of psychology as a whole, even if it is by no means obvious that behaviouristic laboratory experiments, as opposed to the less rigidly controlled experiments done by Piaget, and Bruner (who video-taped the behaviour of children in their own homes in recent work on language acqisition), are the way to really find what's going on.

Psychology is a good example of a discipline which embodies so many mutually antagonistic 'schools' that it is almost a cluster of mini-disciplines, each with a different paradigm. Behaviourism, particularly the more extreme versions such as Skinner's, falls almost completely in the domain of the animate. A hard line behaviourist aims not to refer to an experimental subject's inner life or to its neurophysiology. Although this stance is logically untenable many (e.g. Rachlin) still claim to hold it, and those who refer to something 'inner' tend to talk about brain circuitry rather than mind, The idea behind behaviourism seems to be something akin to 'in-situ' studies of animal behaviour, but using a more controlled environment so that the environment/ organism interaction can be carefully tested and described. There is nothing of the personal in the basic behaviourist 'programme' and the links of behaviourist learning theory to those areas of psychology concerned more with initiation into interpersonally defined forms of life are obscure to say the least.

The psychology of perception is an area in which some key problems are showing signs of intractability. Empirical studies of perception come from three directions these days. Physiologists have shown how the visual cortex of the brain reacts differently to different sorts of images on the retina, some nerves registering vertical lines, some horizontals etc. But as the physiological work has continued it has become apparent that information about relations between retinal images and the 'firing' of

cells in the visual cortext simply don't tell us how we perceive the world. The firing of the cortical cells seems to be a necessary condition for perception, but our perceptual awareness of the world just can't be explained in terms of a ghost-in-the-machine deciphering brain-writing. Similar problems are encountered by computer modellers who attempt to encode pictures and movement in an attempt to discover how we 'process' visual cues in building up a model of the world from our visual input. The problem here is again that of perceptual awareness. If our brains were simply biological computers which build up, digitally, or analogically, a 'picture' of the world coded as neural impulses, then we would again need a ghost-in-the-machine to give us awareness of the mental 'picture'.

The psychology of perception proper is concerned, still, with the organism/world relation, but seems to be reaching the point where, as the physiological and computer-modelling accounts are clearly seen not to be explaining anything about perceptual awareness/experience, psychologists are beginning to try to relate action to (usually visual) experience by seeing what people can do in terms of visual tasks and visual memory tasks (i.e. running a simple maze blindfold - apparently this is easy if done entirely inside of 7 seconds of the blindfolding, after that we make mistakes). This is still not psychology in the personal, but once the psychology of perception really engages with the problems involved in relating experience and action it will, I believe, find it necessary to move into both the personal and the interpersonal as it engages with the social elements in our interpretation of perceptual experience.

Learning theory, as I have already remarked, is engaged with problems of the organism/world/social world relations. Here learning processes are described, but by far the most energy, particularly from the developmental psychologists, goes into descriptions of

language acquisition and the learning of specialist ways of looking (e.g. Bruner's work on the teaching of Maths). The learning theorists tend not to look at their subjects from the perspective of the personal, they tend to look at the problems of initiation into interpersonally defined institutions.

Educational psychology draws on learning theory of the more interpersonal sort, but, in dealing with the problems of individual children, must move towards the personal in explaining why (e.g.) little Brian's emotional problems prevent him functioning as a learner much of the time he's in school.

Finally psycho-analysis, in engaging with problems which simply cease to be distinguishable without a presupposition that what are being dealt with are problems which arise from a subject of experience's inner life, finds itself in the middle of the personal, though it must also relate to the social in that many problems of the personal are related (in ways we understand hardly at all as yet) to problems of the interpersonal (from the stresses of social life to questions about whether 'sanity' is a normative concept).

Psychology, then, in its myriad forms (and I haven't mentioned them all, there are social psychologists and there are phenomenological psychologists too), spans the animate, interpersonal and personal, and only my earlier rejection of physicalist accounts of mind rules out the inanimate, even though there are physicalists (like Quine) who would simply include all problems about mind in the domain of the inanimate.

What is undoubtedly the case, as a matter of empirical fact, is that the different areas of psychology use different concepts in dealing with different problems. Behaviourism tells us quite a lot about schedules of reinforcement in rats. Development psychology tells us much about infant learning in humans, particularly about

language acquisition. Social psychology tells us about how groups of people organise themselves into hierarchies. My suggestion is that the diversity of approaches to be found in the different areas of psychology reflects not so much the confusion of psychologists about what they're doing, but rather the fact that different areas of psychology are concerned with different problems. Thus it is to be expected that areas tackling problems from different general domains should adopt different approaches to those problems.

The problems of psychology fall into different domains, and, as a matter of empirical fact, areas concerned with different domains (from my point of view) use different approaches. Further, an area, like the psychology of perception, which seeks to relate problems (and solutions) from different domains, turns out to be an area where a degree of confusion is being generated as psychologists come to realise that the accounts of 'perception' given by physiologists and computer-modellers are largely irrelevent to crucial problems about our perceptual experience. Thus, like aesthetics, the psychology of perception has conceptual problems which arise from trying to deal with basic problems which seem to sit between domains. Art is both a personal expression and cultural artefact. Perception is of an external world, not of neuro-physiological impulses, but certain physiological conditions, describable extensionally, must be fulfilled before perception can occur. In both cases problems occur because the same problem seems to have aspects which invite comments from different perpectives. Relevent theoretical statements can be made which draw on different paradigms, paradigms which embody different presuppositions about the nature of what is being explained. The real problem occurs when it is realised that the personal and interpersonal elements in art or the physiological and conceptual elements in perception are, though formally distinguishable, not separate. They effect each other in some sort of

dynamic relationship which, because of the different concepts used by different approaches, we have difficulty in deciding how even to begin describing. (It should be noted that merely showing that there are correlations between the different sorts of statement is in no way even to begin describing what the relations consist in). That these sorts of problems, which occur in real theoretical activity (as I have shown), fall in the grey areas between my general domains, is what gives me confidence that my domains are not merely a possible classification, but, more, one that really does capture the present state of our understanding.

So I am suggesting that my general domains do distinguish the different sorts of problem that systematic enquiry has separated out to date. That the classification of problems into the inanimate, animate, interpersonal and personal is incomplete is demonstrated by the existence of grey areas, like that around the problems of perception where different approaches all seem appropriate to a limited extent, and where the inter-relations between the findings of the workers from different 'home' domains are unclear. Although correlations clearly exist between brain-states and states of mind the terminologies in which the different findings are put simply don't 'marry', conceptual differences make it difficult to show how the different theoretical statements, generated under paradigms arrive at in different domains, relate.

It should be remembered that the distinctness of the domains of the inanimate, animate, personal and interpersonal is between different sorts of problem, problems which, given our present level of understanding seem to be adequately solvable only under different paradigms. But although this means that different concepts will be needed in different domains this does not mean total logical disjointness between domains. The language games of specialist enquiry constitute 'families' within which some agreement on basic

presuppositions can be reached, but this agreement isn't total. The links between different specialities' ways of looking are of a 'family resemblance' sort, not formal identity in key areas. And similarly for the techniques and procedures used in doing research.

Thus my distinctions are not between areas which are so different that workers in different areas will have nothing useful to say to each other. A physicist could attempt to give an extensional description of a number of violins judged by violinists to be instruments of the highest quality in the hope of discovering what features of a violin's construction are relevant in producing an instrument which, when judged aesthetically, will be found to have a good tone. This is only one instance of the relation which holds so often between artistic creativity and understanding the inanimate. Whenever art involves manipulating a physical medium (paint, stone, wood, fibre-glass etc.) a certain level of understanding of the medium as inanimate object is appropriate. How could a sculptor hope to produce a statue without quite a lot of mundane knowledge about the grain and other physical characteristics of the lump of stone he confronts, hammer and chisel in hand? The body of knowledge which an artist acquires to facilitate his activities must include information about the various available media, viewed from the perspective of the inanimate, as well as knowledge of established convention and of himself, viewed from the perspective of the personal, as being engaged in the artistic expression that must be what is prior in art (the rest being viewed instrumentally in the context of artistic creativity).

Similar observations can be made about scientific method, in the crude sense of involving careful observation/ the formulation of testable hypotheses/ careful testing of the hypothesis against observation, being generalisable in ways appropriate to disciplines working on problems outside the inanimate. Something akin to scientific

method seems appropriate in many contexts. For instance Frederick Forsyth researches all his novels in very great detail not only through reference books, but also by interviewing people and visiting important locations himself. Now insofar as Mr. Forsyth adopts a careful and systematic procedure for unearthing the empirical information he requires it seems reasonable to say that he is following the example of physical scientists one of whose contributions to the growth of our understanding has been an emphasis on accurate observation - he uses an approach which, if it isn't full-blooded scientific method, is derived from the activities of scientists.

But the adoption of scientific method in this (extended) sense isn't to be confused with becoming physics. To attempt to control and systematise the collection and analysis of data is something which any empirical discipline must do, and in making the attempt disciplines like sociology and psychology are quite properly following the example of the physical sciences and the life sciences (where close observation and description of plants and animals has long been common practice). The danger is that the social sciences, adopting a systematic approach to data collection and analysis in imitation of the natural sciences, also seem to have a tendency to adopt physics-based analyses of data and so have failed to engage adequately with the special features of problems from domains other than the inanimate.

So disciplines working in different domains will nevertheless share features at particular points in time. Concepts will be shared, as when an artist is dealing with the physical problems involved in producing a work of art, and techniques will be shared, for instance the use of statistical analysis in the methodologies of sociology and physics. Nevertheless the domains are distinct and there will be conceptual differences between the basic paradigms appropriate

for adequately dealing with problems which clearly fall into different domains, The 'picture' which emerges is one of a series of related ways of looking which form a continuous and overlapping set of conceptual frameworks. The domains are distinguished 'symptomologically', by there being areas of problems where the appropriate ways of looking exhibit different conceptual 'symptoms' in terms of the presuppositions they embody about how things are in the world. The symptom of the inanimate is the presupposition that physical objects (life, consciousness and convention being irrelevant to the problems) are being dealt with. When confronted with theory that presupposes that what is being dealt with is a living organism we are looking at work in the domain of the animate. The presupposition of conventionality is symptomatic of the interpersonal, and consciousness and agency are presuppositional symptoms of the domain of the personal. Grey areas are simply areas of problems which just don't respond to being looked at in terms of one or another of our usual presuppositional-perspectives or else problems which are to do with the relation between findings generated under different paradigms, paradigms generated in dealing with problems that did respond to a theoretical analysis built on one of our usual presuppositions about the sorts of 'thing' that confront us in the world. Disciplines working in the grey areas between domains tend to encounter conceptual problems when attempting to achieve concensus on a basic paradigm because different specialities within the discipline often turn out to use modes of language which exhibit the 'conceptual symptoms' of different approaches.

My remaining problems are with the placing of philosophy, pure mathematics and symbolic logic in relation to the domains of the inanimate, the animate, the interpersonal and the personal. There are similarities between the case of philosophy and that of the formal disciplines, but there are also differences, so I'll tackle philosophy first.

The essential thing to bear in mind when thinking about the relationship of philosophy to my modes of understanding is that philosophy has changed greatly over the last few hundred years. In that short quote from Newton I gave earlier it should be noted that he represented his laws of motion as a contribution not to mathematics, nor to physics, but to philosophy. To Newton, as to generations before him, anything that increased human understanding was seen as a branch of philosophy - it is largely due to Newton's work that physics came to be seen as distinct from philosophy. Thus the division of labour which has led to the establishment of distinct traditions of enquiry is a relatively recent phenomena. Philosophy, it seems to me, has itself fragmented as the traditions have separated. In its role as a way of criticizing theory, philosophy becomes an integrated part of each and every area. Any theoretical endeavour has problems about (eg.) how to explain the data it collects, problems which in part are about what sort of explanation is appropriate or whether a theory is coherent, makes sense. These questions about theory are philosophical so it is quite natural that we should have the philosophy of science, philosophy of mind and social philosophy(etc.) emerging to deal with the specific problems in and between different areas.

But, of course, philosophy is more than a way of criticizing theory. Philosophers also investigate questions about what sorts of theory should be appropriate for the disciplines, we also investigate our notions of knowledge and understanding in an effort to clarify what it is we're talking about. So we must assert that philosophy isn't just a 'service industry' helping others to sort out their theories. Philosophy is a second order endeavour, a way of looking at ways of looking in order to both elucidate the status of current ways of looking and to make suggestions about

what conceptual frameworks are appropriate for tackling problems. Philosophy is also a way of indicating areas of importance which current theoretical activity casts little light on and, again, suggesting what might constitute appropriate or inappropriate ways of casting light on them. And, of course, in the work of some metaphysicians, philosophy maintains an interest in absolutism, in the possibility of transcending the views of reality which we have derived through empirical enquiry and arriving at an explicit and demonstrably true account of 'things-in-themselves.'

I feel, however, that it is wrong to separate philosophy as a special mode of understanding in its own right. Without close links with the world of empirical fact philosophy can become nothing more than the spinning of elaborate and rigorously constructed fairy tales. This wasn't so obvious in the days when it seemed reasonable to assume that there was, in principle, one and only one completely coherent account of how things are in the universe. But the non-Euclidean geometries were only the first nails in the coffin for that belief.

Modal logic has even thrown the traditionally assumed to be unquestionable (on the grounds that denial doesn't make sense) axioms of two-valued logic into question so that the best we can say is that two-valued logic seems to be the natural basis for human modes of conception, not that it reflects the ultimate nature of reality (although logicians are still debating the issue).

So we now have to accept that many of the endeavours which philosophers have traditionally seen as absolutist were misconceived - in particular we must conclude that the most elegant, internally consistent and complete a priori theory we can imagine is not thereby identified as ultimate truth. It seems to me, then, that

philosophy must be intimately linked with the empirical disciplines if it is to establish that it has any general value beyond that which any game has for those who enjoy playing it. That value must derive from the fact that any empirical discipline must have problems about the status and internal coherence of its theories and those problems are problems for philosophers as well as for physicists, psychologists or initiates of any other discipline. These links between the problems of philosophy and the problems of other specialists are what bind philosophy to first order disciplines. The different theoretical issues which many empirical researchers find tedious and frequently incomprehensible are, from the philosophical point of view, particular instances of general philosophical problems, some well known (like Ryle's 'Ghost in the Machine' which still seems to come to mind whenever I hear people talking about the 'physiological basis of perception'), others being defined only as the philosopher examines a current theory (as with the way interest in the concept of development was aroused by the work of Piaget, Kohlberg and Bruner.)

It seems to me that anyone who reflects upon the precise status of the statements he makes, who seeks a deeper understanding of what he said, to pin down which of a range of subtly different interpretations is correct, is beginning to engage with a basic problem of philosophy. A trained philosopher learns a great deal about the sorts of problems that can arise with theory but his value must derive from his ability not merely to solve or sort out problems at the level of philosophical discourse, it must derive from the fact that his philosophical points are not just moves in an academic game, they must also be of relevance to the problems of the first order disciplines. If the first order discipline is of no such general value then logically, philosophy can derive no such general value

from its relation with that discipline. And if I am right to maintain that a demonstration of general value, given the failure so far of absolutism is only possible if a discipline can be shown to deal with a basic area of problems which is justifiably judged to be important, then philosophy without ties to first order activity in the problem domains is not demonstrably of value. This does not disvalue attempts to understand the modes of understanding, nor attempts to unify different modes, or to philosophically specify the problems involved. Insofar as the 'grey areas' between areas which clearly fall within the modes cover problems which can be shown to be important work which is designed to illuminate those areas must be regarded as valuable.

The one area of philosophy which might be disvalued on my account is that area of metaphysics concerned with the possibilty of specifying absolute truth. Without denying the possibility of specifying absolute truth we might reasonably decide that the long record of failure in this endeavour constitutes a good reason to opt for rational-piecemealism, to simply discount the theoretical possibility (the possibility that it might be possible to acquire absolute truth) as one with little practical relevence. It is fairly obvious that within the British Analytic tradition philosophers have been 'voting with their feet' on the issue for quite some time - the sort of metaphysics to be found in Findlay's 'Ascent to the Absolute' is rare within this tradition although it is more prevalent with the traditions of continental Europe, notable amongst the existential school.

For my part I must suggest that whilst such philosophy has inspirational force it cannot give us any good reasons for valuing it. Absolutism, as a systematic enquiry is far less common than the phenomenon of people incapable of questioning basic presuppositions,

people whose psychological dependance on certain presuppositions is so great that even the idea that they might not be absolutely true creates massive anxiety. Such people are all too common and constitute barriers against the advance of understanding.

There is, I believe, a case for arguing that to discount absolutism would rob these individuals of the very shaky crutch they cling to and force them to abandon their questionable faiths and intuitions and engage in rational discourse. Making everyone face up to the problems of life as problems to be solved by human effort rather than divine intervention, making people approach the world from a human perspective rather than trying to achieve a completely neutral standpoint, might help us deal with important problems by removing the obstacles which dogmatic adherence to putative absolute principles (religious and political being the prime offenders) put in the way of rational planning and action.

Of course this view ignores too much the fact that people aren't all that rational in a great many matters and that we don't want to be. Falling in love is essentially nothing to do (for most people) with objectively assessing the person one loves as a potential life partner, it's a much richer experience than that and not to be avoided for all its irrationality. In the religious especially it seems reasonable to suggest that religious people should regard their religious activities as expressive of faith and should refrain from efforts to press their beliefs on others. In politics it seems reasonable to insist that dogma is inappropriate and diplomacy appropriate, but of course I am here assuming that politics is about organising society whereas if Nietzsche was right about the will to power it's possible that politicians interpret their activities in very different ways.

However, none of this undermines my basic contention which is that philosophy is a way of increasing the depth of our understanding, a second order activity whose findings are part of, not distinct from, the different 'world views' which work in the inanimate, animate, personal and interpersonal has given us. In its role of investigating the nature and status of theory philosophy must arrive at an awareness that different demands must be made on theories designed for problem solving in different domains, and that our present ways of looking at the world have weaknesses and will be replaced if something turns up that can solve some of the problems which are currently unsolvable. So philosophy must not stress its absolutist history, it must acknowledge that philosophy as a way of arriving at absolute truth is an old and not very healthy view and acknowledge the importance of an 'evolutionary' model of theoretical understanding. Philosophy must adjust to the real problems of understanding, the status of our paradigms, the taxonomy of problems and the problems of elucidating the grey areas between domains where our present ways of looking seem inadequate.

The remaining problem to be dealt with here concerns the placing of mathematics and formal logic within my schema. I would suggest that, like philosophy, these endeavours can only derive general value from their links with the first order disciplines. Mathematical modelling, (not modelling in the same sense as the models that serve as the link between theory and the world), the construction of systems in which the formal (ie. axiom-governed) relations between variables parallel the contingent relations between things-in-the-world has been a central part of the methodology of physics since Newton formulated his laws of motion. Davidson's approach to meaning can similarly be seen as a formal description, in terms of a formal notion of truth (Tarski's convention T), of the structure of

language, a sort of logic-based model of the extensional part of language. Pure mathematics and formal logic are both concerned with the elaboration of sets of axioms which, as work in both areas over the last century has shown, are logically arbitrary in the sense that large numbers of axiomatic systems can be constructed on bases which are mutually irreducible. This being the case the generation of such systems would appear as a very elaborate game with no relevance beyond its own boundaries were it not for the fact that the formal systems can be designed so as to provide formal models of natural and social systems. So our knowledge of pure mathematics and formal logic derives general value (value which consists in more than the fact that those who engage with these endeavours enjoy doing maths or logic) only from the fact that the formal disciplines can be put to work in the first order disciplines. In the case of formal logic we might suggest that 2-valued logic derives its value from being a model of human reason - it certainly doesn't completely model the world as recent work in sub-atomic physics, where modal logic seems to apply, has shown.

I should re-iterate here that this is not an instrumentalist account of the formal disciplines. As I observed earlier in this discussion of understanding mathematics is <u>not</u> a discipline which grew through unsullied pure interest and just happened to prove useful to the empirical disciplines. The Greeks chose the axioms which became the basis of Euclid's geometry because they appeared to be true of the world and there are many examples (projective geometry, statistics, calculus) of the impetus for doing pure maths deriving from the pure mathematicians attempting to give a rigorous account of techniques which had been arrived at in other comtexts. Similarly the growth of formal logic seems inextricably linked to the desire to rigorously account for what should or should not be admissable in rational argument. There is even some

justification for suggesting that the real source of recent interest in modal logic is not so much the intrinsic interest which logicians have for their subject, but rather the fact that intuitionist mathematicians and sub-atomic physicists have found it useful to refuse to assert the law of the excluded middle. Just as Cauchy's work on the logical basis of calculus was made necessary by the fact that physicists after Newton presented pure mathematicians with a fait accompli by simply using notions like speed at a point, so the logicians have been pushed into investigating modal logic by some mathematicians and physicists abandoning the law of the excluded middle.

My account of the formal disciplines is not instrumentalist because the relations between the problems of logicians and mathematicians and those of initiates of the empirical disciplines are logical. The empirical workers find it useful to use certain ideas or to discard others and the workers in the formal disciplines find themselves confronted with new ideas to make sense of or to reveal as incoherent. Alternatively the formal workers may come up with ideas (e.g. the non-Euclidean geometries) which empirical researchers find appropriate as problem-solvers. As I emphasised earlier this does not mean that individual formal theories should be evaluated in terms of their relevance to work being done by particular empirical researchers. Rather the whole formal endeavour gains general value only from the logical links of its problems to the sorts of problems engaged with by those working in the first order disciplines. Any more strict demands would, owing to the different rates of progress in the different areas (physics lagging behind maths and logic and vice versa depending on the examples taken), be likely to be counter-productive in terms of increasing our understanding. As to the relationship between logic and absolutism I can say little, I have already pointed out that the relation assumed by Kant has been shown not to hold but to say that logic cannot help in the

endeavour would be to pre-judge what the future might bring - in view of what has happened over the last century in all areas of understanding this would be a foolish thing to do.

Thus I regard the formal disciplines as being, like philosophy, inextricably linked to the first order disciplines. This doesn't mean that pure mathematicians or formal logicians should be discouraged from research which has no immediate cash-value in terms of relevance to the first order disciplines - to take that line would be likely to stifle progress. Rather we must take care that the formal disciplines don't sever their links with the first order disciplines and become nothing more than esoteric games (as the learning of Greek and Latin became once those languages had ceased to be the languages of European academia). The link that must be preserved must be in terms of pure mathematics being concerned, in principle, with the analytic basis of the applied mathematics (mechanics, numerical analysis, statistics, geometry etc.) which the first order disciplines find useful as part of their methodology, and similarly for the relationship between formal logic and such things as philosophical analysis, linguistics (e.g. the importance of Chomsky as the impetus for Davidson's work on language) and (again) maths and physics (as in modal logic).

The only disciplines I haven't dealt with are those like theology and (some) metaphysics that seem to lose their character if not acknowledged as absolutist. There are difficulties for theology because of the undeniably social nature of religion and because of the expressive element in religion. It is impossible to judge religious world-views as true or false and although we might want to describe them as non-progressive problem solvers, because the absolutist presuppositions they embody preclude change, we cannot simply dismiss them. All we can do with the religious (as with absolutist metaphysics) is to keep an open mind whilst allowing believers to

follow their beliefs for so long as the resulting activities are within rationally established social norms - I covered this in more detail earlier. In general endeavours which are strongly absolutist, in the sense of being concerned with the possibility of knowingly discovering absolute truth, are open to a charge of being spectacularly non-progressive. The endeavours of a metaphysician like Findlay rest on a hypothetical presupposition to the effect that the acquisition of absolute knowledge is a possibility for us. I call this presupposition 'hypothetical' because as things stand it is no more than one possible presupposition. Given the failure of absolutist metaphysics as a problem solver there is no justification for taking this presupposition as anything more than a theoretical possibility, a hypothesis for which there is no support, but which can be worked under in an attempt to give it support (by demonstrating its problem-solving potential). So absolutism is a possible, but decidedly non-progressive, approach to constructing a publicly accessible understanding of the world.

I think I have now dealt adequately with the relations between the disciplines and the problem-domains of the inanimate, animate, interpersonal and personal. All that I want to do before becoming more explicitly educational in outlook and discussing curriculum issues is to look again at the relationship between knowledge and understanding in an attempt to remove confusion arising from different senses revealed. in our uses of the verb 'to know'.

Knowledge and Understanding (ii).

In my earlier discussion of knowledge and understanding I said that to understand something involves possession of the relevant conceptual framework/ conceptual skills whereas knowing involves the exercising of understanding with respect to some state of affairs. In other words understanding what it is for it to be raining involves possession of the relevant concepts whilst knowing that it is raining implies that those concepts have been used in characterising a particular state of affairs, at least in cases where the knowledge is acquired through direct perception. We can also acquire knowledge via others who are in a position to know if they transmit their knowledge to us via symbolic communication and by reading indexical signs. If someone comes in out of the rain and tells us "It's raining", then, provided that what he says is true, and provided that he knows that it's raining, then we can be said to know - and more significantly we can also acquire indirect knowledge via books, television programmes etc. We can acquire knowledge indexically by, for instance, noting that someone who just came in the house is wet. There are all sorts of possibilities for error here, authors, journalists and people who just tell us things may be mistaken or liars, and it is possible that someone might wear a raincoat under a lawn sprinkler on a dry day and mislead us. But it must be clear that we can acquire knowledge indirectly provided that certain conditions are satisfied, primarily that what we deduce from what we see or hear is true, but also that the chain of circumstances from the original state of affairs to our formulation of the relevant proposition/belief is such that the truth of the latter is arrived at because the original state of affairs was as it was rather than by accident. The precise specification of the conditions to be satisfied can't be discussed here due to lack of space.

My primary interest for now, though, is in two questions, which are whether it is possible to know without understanding and whether it is possible to understand without knowing. The first question will be dealt with first.

There is one important sense in which it is possible to know 'that S' without understanding the significance of the statement S. It is possible to learn an inscription of a symbolic representation without understanding it at all, or at least without understanding it very well. If I walked into a class of 15 year olds, handed out duplicated copies of the private language argument, and told those assembled that when I came back next week I would give £10 to everyone who could write it out in full, there would be a good chance (provided I was believed) that when I arrived back with a full wallet I would be faced with a group of pupils most of whom knew the private language argument. This is not a silly example, a great many students learn theory for exams in this way, they recognise the questions and spew forth the required answers without any real understanding of what they are writing. The real test of this is when we investigate what happens when a question is asked in an unfamiliar form - all too frequently, students simply are unable to answer, they have learned 'recipes' for passing exams but have acquired very little understanding of the theory. This is certainly true of a great many school kids' approach to mathematics and, I would suggest, of quite a few student teachers amongst others who can write convincing exam answers in education but who, as a few minutes conversation reveals all too often, simply don't understand the theory they 'know' in terms of its embodying a theoretical conceptual framework which relates to everyday practice in a classroom.

This is the main source of my dissatisfaction with language-bound accounts of concept possession where what

is stressed is the ability to give a verbal account of what the concept word means. Understanding, it seems to me, must involve the possession of conceptual skills, the ability to use the concepts acquired from books and lectures in 'reading' the world, the ability to acquire knowledge by relating theory to the world as encountered in personal experience. This sort of understanding is precisely what written examinations so often fail to test, Too often teachers propagate knowledge only in the sense of training pupils to 'parrot' answers or else to follow 'recipes' ritualistically. Too infrequently do we actually manage to propagate a full understanding, the conceptual skills which would make our pupils into knowers, people who can subsume their own experience under theoretical conceptual frameworks and hence derive specialist knowledge for themselves.

I suggest that this tendency in schooling comes from an emphasis on knowledge to be learned rather than on understanding to be acquired. The sense of knowing in which someone who can recite a poem knows it is a proper sense, but a weak one, someone who knows theory in this sense may simply not understand what he knows as a way of looking, and someone who lacks that understanding might reasonably be expected to regard school learning as an empty ritual without any real importance outside school. It seems to me that although we have moved away from the old emphasis on rote learning we have not moved far enough. Our techniques of assessment are still such blunt instruments that we find ourselves testing our pupils' memory for facts/ mechanical procedures rather than their understanding. This, I suggest, is particularly the case in maths and the sciences where there is still (especially in maths) a tendency to teach facts and theories in isolation without stressing the relationship between the evolution of the theory and the historical changes in our way of life. We don't leave enough space in our syllabuses for drawing in the links between different areas of theory and everyday life , thus we represent knowledge

thinly and rarely manage to get its importance across. We end up cramming a mass of 'dead' information into our pupils minds which most of them seem to forget, either immediately or as soon as the relevant exam has been passed. What we fail to do is to propagate the understanding that would make the theory we transmit 'alive', make it seem vital, a way of 'getting hold of' the world in all its aspects, making sense of it and enabling us to handle it more confidently and efficiently.

Even if we manage to inculcate in our pupils a grasp of the concepts, procedures and language of some area so that besides giving a verbal account of their'understanding'they also make it manifest in terms of using it in relevant circumstances, thus demonstrating that they have 'inertnalised' the theory and can use it to make sense of the world of their own everyday experience, there may be something missing from their understanding. If I am right (and I believe I am) in rejecting Peters' characterisation of the point of a discipline as being something that must be sensed by an initiate and cannot be stated, then a proper grasp of physics or art or maths must include seeing the discipline as purposive, as addressing certain fundamental sorts of problems. And it is further the case that, if a discipline is to support a claim to be rationally organised and/or of general value, its basic problems (and why they are important) must be stateable. Thus it must be possible to give pupils of school age (particularly in the later years of secondary schooling) some idea of what a discipline's point is. It will probably remain impossible to state the basic problems of a discipline, and the various solutions offered, with full rigour, just as, at school level, it is impossible to prove that 2 + 2 = 4 with full mathematical rigour, or to fully explain what goes on in a chemical reaction. But it should (to misquote Bruner's famous assertion),with intellectual honesty, be possible to accurately represent, to pupils of school age, any discipline as being a purposive endeavour and to give some idea of what sorts of problems are being

looked at, and why. Where this is not possible because the discipline lacks the consensus which is needed to justify a claim to rational organisation and/or general value, its inclusion on a school curriculum would seem decidedly odd. The importance of this sort of understanding, of a discipline as purposive, is important in that someone who mastered the concepts, procedures and language of a discipline without understanding them as being used because they are appropriate for the discipline's explanatory pruposes would fail to grasp what he was doing when he engaged with the discipline. His activities, from his point of view, would appear to be ritualistic (whether he enjoyed the ritual or not), he would fail to see his activities as purposive even though they would serve the discipline's problem-solving purposes. In other words such a person wouldn't, in an important sense, know what he was doing.

It is then, in a sense, possible to know without understanding, and it is possible to know and to understand what is known inadequately. The next question to be answered is that of whether it is possible to understand something without knowing about it. This is not a question that makes much sense in terms of my analysis of understanding with the stress I have put on the possession of the conceptual skills which make someone a knower, a person whose understanding is constitutive of an ability to read the world in a way that makes the detail of everyday experience more significant, more informative, but there are issues here which must be dealt with. Understanding is not an all-or-nothing affair, it is possible for someone to have an understanding of theory which consists entirely in an ability to discuss it in a theoretical context but which has no impact on his perception of the world, or his view of his own role in the world. In such cases the theory is 'understood' as a game with no relevance beyond its boundaries. It seems to me that someone who 'understands' a discipline in this way has, in fact, failed to grasp the central point of the discipline -

we could say here either that he has misunderstood it or has a thin and inadequate understanding of it. But this would not constitute understanding without knowledge, such a person would know how to play the theoretical game and would possess much theoretical knowledge. What would be the case, however, would be that the possessed understanding would fail to make the person in question a knower, someone whose understanding enables him to read significance into the world of everyday experience.

A second issue here involves a question about what is involved in knowing. What is <u>not</u> involved in knowing is knowing or being aware of possessing the knowledge. At the level of theory we must demand that knowledge is made public and knowledge claims justified publicly - if we failed to do this we could never establish public modes of understanding. It seems reasonable to say, however, that in some areas understanding is made manifest by success in some endeavour even when it cannot be made public by writing it down.

The understanding which allows some people to handle others successfully, which constitutes part of the skill of a gifted administrator is not very well understood in theoretical terms, yet it is undeniable that some of us do understand how to handle people better than others. A good stockman will breed better dogs/cows/horses etc, than someone with less understanding, but biologists still can't explain theoretically how to achieve this. In the same vein some footballers seem to be better than others not in terms of faster running or better ball-handling, but in terms of being able to 'read' a game better so that they turn up in the right place at the right time more consistently than others even though they can't say why. And in the systematic disciplines some researchers' hunches seem to turn out to be right far more often than others', and we can't explain that either. All these are examples of

intellectual skills which people do possess and which cannot, as things stand, be acquired by learning and applying theory. Nevertheless, I suggest, we must ascribe understanding to such people even though they can't explain their abilities. It is theoretically possible that their success is a matter of sheer blind luck, but the probability of consistent success-by-accident is so small that we must surely discount this possibility and accept that some people in some areas have, by trial and error, by good luck, or by being naturally gifted, arrived at a way of conceiving the world which enables them to handle certain aspects of it with a sensitivity that explicit theory so far cannot parallel.

The question that now arises is that of whether such understanding leads to knowledge. I think we must say that it does even if that knowledge is not, as a matter of contingent fact, expressable publicly. In his book 'Personal Knowledge' Michael Polanyi introduces the notions of focal and subsidiary awareness. Usually when we acquire knowledge we begin by being focally aware of it, by consciously rehearsing the theory and applying it to some state of affairs. Thus when someone learns to play arpeggios on a musical instrument he will usually begin by actually naming the notes and consciously recalling how to finger them or (on a key board) where they are. But after a while this is no longer necessary, the notes of a C chord (or $B\flat^{7\flat9}$) are just played. Jazz musicians often know the chord progressions of tunes they play all the time so well that it takes a real effort to write the chords down, they can play the progression perfectly but without an instrument to hand they find it hard to remember it. This phenomenon is familiar to all drivers who start by learning (focally) what all the levers and pedals do but soon come to a point where they just drive. The knowledge has passed from the level of focal awareness to that of subsidiary awareness in

which we are not aware of it, and in extreme cases the ability to recall what is known to focal awareness can be lost - the case of someone who has forgotten more than most of us are ever likely to know.

Polanyi also suggests that there are some areas of knowledge which are both generated and trapped at the subsidiary level, he talks about the need to learn the sciences, in part, through serving a sort of apprenticeship, working under an accomplished scientist in order to 'catch' the understanding which is manifest in his skilled performance (both intellectual and physical) but which, because it is irretrievably part of his subsidiary conceptual repertoire, he is incapable of summoning to focal awareness and hence cannot express verbally.

I cannot accept that, in principle, someone's understanding cannot be expressed verbally as this would involve that person possessing a private understanding in the extreme sense which Wittgenstein's private language argument rules out. But it is undeniable that much knowledge and understanding can become part of our subsidiary repertoires in the sense that, as a matter of contingent fact, we demonstrably possess such understanding (ie. we possess the conceptual skills which allow us to 'read' some aspect of the world and handle it more successfully) but we cannot express that understanding linguistically (or, more generally, in publicly accessible symbolic form).

There is little problem with extending Polanyi's idea by suggesting that the 'flow' of understanding can go both ways. The 'flow' from focal to subsidiary awareness obviously happens, but my suggestion is that the flow can also be from subsidiary to focal awareness. My idea is that we can come to understand the world, in some cases, by simply 'standing under' it, by being confronted with something we find problematic or

interesting and attending to it or 'fiddling' about with it until, ultimately, we just 'see' how to handle it, the realisation of what it's about just dawns on us, something 'clicks' and we're off running where formally we shuffled about uneasily. This clearly happens in the learning of theory, any teacher must, at some point, have 'seen the light dawn' for at least a few pupils when someone who up to that time had just followed an explicit set of rules suddenly 'gets the idea' and from then on possesses the ability to solve simple equations or write down the formulae for chemical reactions. What I want to add to this uncontentious suggestion is that the conceptual 'accomodation', which seems to be what this shift from focally following explicit rules to the possession of a subsidiary conceptual skill consists in, can be achieved independantly of explicit rules (ie the formally stated theory).

As well as following rules until the idea clicks and we have acquired the conceptual skill which rules parallel, I want to suggest that we can acquire conceptual skills by engaging with the world directly. Instead of subjecting ourselves to the constraint of theory in an attempt to 'train' ourselves to conceive things in a particular theoretical way we can (in some cases) simply subject ourselves to the world and in being subjected to its constraints can directly acquire the conceptual skills which constitute an understanding of it. This, I have argued at length in earlier discussion, is what happens in language acquisition. In engagement with other people and in attempted verbal interaction a baby is involved in 'banging his head' against the conventionally defined world of language. As this interaction proceeds the child gradually realises (with help from language users) how to achieve his desires verbally - the child's conceptual accomodation with respect to language is achieved not via the focal awareness of explicit theory but directly through engagement with a significant-to-him world.

Similarly, I suggest many possessed skills, such as

those mentioned earlier which theory cannot parallel must be acquired directly through engagement with aspects of the world which the individuals concerned, find problematic/interesting. I am not suggesting that this sort of understanding is superior to the understanding that can be achieved through focal awareness of explicit theory. Indeed the public nature of theory makes it likely that understanding-via-theory will be more free from internal logical problems and will fit the world better simply because an explicit theory is subjected to systematic analysis in a way which the everyday understandings acquired directly are not. But we must not devalue these everyday unspoken understandings. If theory is to be more than a technical game it must relate to them, must improve on them, and in some cases it must emulate them, must try to make explicit in theoretical form understanding we all possess (such as our understanding of language). And further it seems undeniable that involved in the formulation of new theory there is often an element not merely of systematic plodding forward, but of making intelligent guesses and trying to substantiate the end point of the 'leap' by working out a 'theoretical path' to it - this is how the intuitive mathematicians work. It seems at least plausible to suggest that this is a process where the subsidiary conceptual accomodation comes first and its expression as explicit theory comes second. Thus intuition can be seen as a working of our sub-conscious mind trying to accomodate experience which is anomalous with respect to our current conceptual framework in some areas, the hunch as the 'realisation' the 'click' of the anomaly suddenly falling into place and the expression of public theory as both a way of making the new understanding available to others and as a way of making it accessible to a public checking process so that we can vouch for the knowledge, so we can reasonably claim to possess knowledge, that we have actually acquired good understanding and not merely

arrived at a 'thin' understanding, a false model which accords with certain limited aspects of the world but doesn't generalise at all. The making public of understanding by constructing explicit theories also enables us to separate out prejudice and innaccurate models which we acquire through socialisation from true understanding. Thus following up hunches and intuitions is only part of the methodology of research - simply stating intuitions has no part to play in the justification of a claim to understanding.

It seems to me then that we cannot, in general, have understanding without knowledge, although it is clearly possible to possess both whilst lacking the ability to express them in theoretical form. It also must be possible (because knowing does not imply being aware of knowing) to understand (and know) without having the slightest inclination to make a knowledge claim. The important distinction to make is between someone possessing knowledge and understanding and the rest of society being willing to ascribe knowledge and understanding to him. What must be the case, if we are to maintain the systematic disciplines on a rational rather than authoritarian basis (religions usually involving accepting the assertions of Popes, lamas etc. unquestioningly), is that we must refuse to admit unsupported knowledge claims. We may reject true statements on this approach because they have not been adequately supported, but unless we make public demands on theory we will be unable to distinguish theory which reflects understanding from theory which reflects prejudice, and surely it is better to err on the side of caution than to adopt a course which would leave the systematic disciplines unable to claim a rational basis.

Finally I should look at one area where it might be thought that understanding is present without knowledge. When I discussed language acquisition I concluded that

unless some 'things' were naturally significant for us we could never acquire language, for without some basic classification to work from the learning of new 'settings' would be impossible, each 'thing' of experience would be a unique and novel entity, distinct from all others and thus incapable of being classed together with other 'things'. Now this natural significance almost certainly has to do with natural biological responses, but here again simply responding differently to different things is not enough, we must be aware of the response as being different if they are to provide a basis on which we can build more complex classificatory (ie. conceptual) skills. This I am committed, as I have already admitted, to talking in terms of innate concepts, although since I have explicitly rejected the idea of a logically necessary link between concepts and language the commitment is not fatal - it does not commit me to talk of innate knowledge of language.

This fact might be held to imply that at some time after conception (and maybe before birth) a baby possesses concepts, but has no experience to apply those concepts to - thus at some time the baby possesses understanding but not knowledge (under my account). In a sense this must be accepted but not without qualification. Insofar as we all can recognise hunger we understand what it is to be hungry, but, as Wittgenstein pointed out, it is philosophically dangerous to talk of people knowing that 'this' sensation they are feeling is one of hunger, this leads, through confusion arising from grammatical form, to mistakes like saying 'you can't, in principle, have my hunger (pain etc.)'. What we know, what we are aware of is not that we have a distinct experience which is correctly identified as one of hunger, but rather that we are hungry, in a state of hunger - I have already dealt with this in my discussion of the private language argument. This 'knowing' we are hungry, like 'knowing'

we know, is best translated as 'being aware that' we are hungry when doing philosophy as otherwise we get into serious difficulties through giving an account of being hungry/in pain etc. on the same model as we account for knowing eg. that it's cold outside, and to do this (as I showed in earlier discussion) is to make a serious mistake. Thus we, as adults and as babies, can be said to have understanding of what it is to experience feelings and sensations (or what it is to feel, to sensate,) but we might feel it necessary to refuse to talk of knowledge of feelings and sensations given the confusion this can lead to. If we do this then we must conclude that in some areas, insofar as experience is being classified in terms of shared significance, we can talk about understanding but not knowledge - this I believe is unproblematic although it might be thought to be a bit pedantic and not really important in terms of suggesting that ordinary language usage is wrong - it is a specialist philosophical point, but an important one.

The case of a baby is, I suggest, in a similar position. The baby is born with the potential to read the world in certain ways(actually being able to do it involves a certain amount of maturation). It is philosophically dangerous to speak about the baby (e.g.) knowing what it is for something to be food or knowing what it is to be hungry for precisely the reasons just given - so here again we have a case of understanding without knowledge, although, again, it would be sheer pedantry to insist that babies shouldn't be described as knowing that they're hungry in any but a specialist philosophical context (although perhaps psychologists might need to observe the distinction between knowledge of the external world and awareness of sensations and feelings).

It is important to grasp that here we are not talking about theoretical knowledge. A psychologist researching

on hunger would be trying to understand hunger and if successful would have an objective account of what it is to be hungry - he would then know, at the level of theory, what it is to be hungry. The level at which the need to talk about understanding what it is to be hungry but at which we should avoid talking about knowing is that of someone who understands hunger in terms of having the capacity to be aware of his own hunger. In such contexts 'I know I am hungry' says no more than 'I am hungry'. The 'I know' might be used in emphasis but it adds nothing to the informative significance of the sentence. Thus it is only in awareness of our own inner states (sensations, feelings, emotions), where we can talk about understanding without knowledge.

Understanding and the Emotions.

My account of understanding so far has emphasised the cognitive at the expense of the affective. I have said that, in a case like that of understanding behaviourist psychology, we cannot write emotional commitment into understanding as to do so would be to make anyone who failed to exhibit such commitment open to a charge of not having a sufficiently full understanding. The question I asked was whether it is possible to adequately understand behaviourist psychology and, as a result of that understanding, find it objectionable. I believe it is. If someone studied and fully grasped the findings and theory of behaviourist psychology he would understand behaviourist psychology in a cognitive sense of understanding. He would have grasped the theoretical perpective of behaviourism and would be able to try to subsume his experience of the world under it even if, for reasons of internal inconsistency etc., he instead rejected the behaviourist approach as inadequate as a way of (cognitively) understanding the phenomenon of learning. In this cognitive sense of understanding the question of what emotional response someone has to something he understands is irrelevent - understanding in this sense involves no more than possessing the conceptual skills constitutive of an ability to see to some degree, how things are, whether the object of understanding is a natural phenomenon, a body of theory or whatever.

In discussing the role of intrinsic interest in systematic enquiry, I once again stressed the cognitive nature of understanding. I suggested that whilst it seems likely that those who are intrinsically motivated to engage with some area will acquire a greater understanding of it (depending, of course, on the individual's intellectual capacities) than those

whose interest is extrinsic, there is nevertheless no theoretical limit to the understanding that someone might acquire whose only motivation is extrinsic. Again here I think I am correct to say this given that I have been focussing on understanding seen as cognitive.

In this section I want to look at what might be thought of as a central weakness in my account of understanding. The suggestion might be made that I'm quite correct to write emotion out of the purely cognitive aspects of understanding, but that I'm nevertheless in error-by-omission simply because I've assumed without argument that understanding is entirely a cognitive matter, and that assumption is wrong. This line of argument would depend on choosing very different examples of understanding from things like understanding a body of theory or theoretically understanding the behaviour of gases. The examples would be things like understanding a work of art or understanding how someone feels. Such understanding, it would be maintained, is simply not expressable in statements, not merely for the technical reason that an infinite number of true statements of different meaning (i.e. sense and reference) could be made about any experience, but because there is something about this sort of understanding which is more akin to an empathic sharing than to a theoretical description.

There seems to be something in this line of argument, intuitively at least. It seems right to say that really understanding how someone feels involves more than identifying the state, its antecedents and its consequences, correctly. I might know that someone's house has been burgled and I may have read a great many books and articles on the psychological reactions of victims of such crimes. But, in a sense, it would seem quite reasonable for someone who had been burgled to say to me, "You can't know or understand what it's like to be burgled 'til it happens to you."

What is being said is that we can possess as much second-hand theoretical knowledge (knowledge gained through anything other than personal experience) as is available about some things but that no amount of this sort of understanding could ever allow us to grasp what it's like to go through the experience. And this is so simply because statements communicate only factual information, not the affective aspects of the whole experience. For now I'll accept this contention, although later I will return and examine claims of this sort more carefully.

The first thing to note here is that these sorts of examples seem only to occur in two areas. The first of these areas is in our understanding of other people where we may feel, for instance, that someone who has never loved could never really understand what it is to be in love. The second area is in art where, it may be felt, whilst knowing (eg.) the historical context of an artist and knowing what to look for in his work can enhance our aesthetic experience, it could never replace it as this would be to miss out the fundamental raison d'être of the whole artistic enterprise. Whilst true statements merely tell us that 'this' or 'that' is, or was, the case, it might be said, a poem can create a mood, can give us an insight, both cognitive and affective, into what it is like to fight a disorganized trench war or to take pleasure in a lake-land spring.

The idea that true understanding involves feelings and emotions can be seen to be most compelling when we are engaged in trying, directly or indirectly, to understand people. This is clearly the case of something like understanding feelings and emotions themselves or in understanding not (eg.) behaviourist psychology as a body of theory but what it's like to be a behaviourist psychologist, an initiate of the 'form of life' which generated the body of theory. Here we are not

simply interested in someone's cognitive understanding, we are also asking whether he has some grasp of how someone might come to be doing behaviourist psychology, why he might choose that approach. That in engaging with a work of art we are seeking, indirectly, to understand a person is a less obvious claim, but I nevertheless believe it to be the case, and will attempt to demonstrate my contention.

Understanding bricks in a cognitive sense might consist in the possession of a great deal of theoretical knowledge about bricks, about the impact of the furnace-fired clay brick on the history of building etc. What more than this sort of thing we would write into understanding bricks I cannot imagine. Understanding what a brick is is something anybody might achieve, the idea of understanding what it is to be a brick smacks of unjustifiable anthropomorphism (except in a metaphorical sense). We might try to understand the feelings of men of different cultures as the idea of bricks opened up the possibility of bigger and better buildings, but then we are indirectly engaging in trying to understand an experience which other people have had. In the case of a mountain one could be over-awed, or frightened or impressed by its sheer physical presence, but surely we would still say that these feelings are not part of understanding mountains even if without reference to such feelings we could not begin to understand mountain climbers.

With a work of art, it could be said, emotion is necessary to understanding in that aesthetic experience isn't merely a matter of a percipient's affective reactions to a physical object like a brick or a mountain. Rather it is a matter of the percipient interpreting a symbol (an iconic symbol to some extent - though things get difficult with literature) and thereby coming to 'share' the artist's feelings and

emotions. True statements do appear in art, and can undoubtedly contribute to the aesthetic force of the work. But the central role of the true statement in literature must be to aid in the creation of a mood, to communicate the feelings and emotions of the artist. If something along these lines was not the case, then it would be difficult to see why a purely cognitive approach to a work of art missed anything out. If, in some sense, a work of art did not embody and thereby reveal the artist, then the work would be a physical object amongst others. We could say that feelings and emotions were necessary for understanding people's aesthetic reactions to the work, but not for understanding the work itself as we would not distinguish between art as conveying feelings and emotions and nature as eliciting them. Again there is much to be said, aesthetically speaking, about the relation between nature and art, and again I will beg such questions on the grounds that such problems are outside my terms of reference here.

All I want to establish here, and I believe it to be done, is that feelings and emotions can only plausibly be said to play a part in our understanding when they are a part of the object of our understanding in some sense. And this is to say when we are trying to understand people and their inner lives directly or else when we are trying to understand what someone has done (including artistic works and other actions) as a manifestation of his inner life, as conveying and/or embodying the affective state of its 'perpetrator.' Only in such cases, it seems to me, does it seem reasonable to say that understanding involves the understander having feelings and emotions.

But so far all I've said is that it seems reasonable to say that understanding involves an affective element in cases where feelings and emotions are, in some sense, a part of what is being understood. When affective states are in some sense (partially) constitutive of

the object of our understanding, then it seems to be the case that our own experience of those affective states plays some part in our understanding. What I want to discuss is the question of how my affective states, affective responses elicited from me by my experiences, can contribute to my understanding.

Take the case of someone whose husband has died. This woman, let us suppose, has had a happy marriage to a man she loved. The death of her husband had an emotional impact on her which depended for its magnitude upon her life history and the importance in it (affectively and otherwise) of the man who has died. Now since I am a man myself and have not been married, and since I have never had the experience of having someone very close to me die, I am a very poor candidate for understanding how this woman might feel. Further,her feelings on the death of her husband are a result (in some sense I will not attempt to elucidate) of her life history, a life history which, in respect of details crucial to this example, is unique - nobody else had her life with her husband. So, it must be asked, if the sequence of events which led her to her 'present' state of mind, is unique, how can anyone ever feel the way she does, how can anybody else have feelings which are close enough to hers to constitute understanding? Some sort of 'closeness of feeling' must be involved in any affective element in understanding as we surely wouldn't want to say that if I felt amused by, or angry at, this poor woman in her anguish I would, in feeling amused or angry, be understanding how she felt.

The reply to this doubting must involve evocation of the imagination. Imagination, it must be said, isn't just playing with concepts, isn't just flying pigs, the Silver Surfer or the Incredible Hulk. Imagination is also sensual - when the wind crashes through trees, sounding like the sea breaking against the foot of a cliff, we can almost feel the spray on our faces and

taste it's saltiness. And we have an affective imagination - we can, in a sense, feel the sadness as Bergman and Bogart part at the end of 'Casablanca', or the sense of futility in the surviving captain, a man who has seen that his era is ending, at the end of 'Seven Samurai'. This seems a plausible stance - although we can perhaps never have the specific experiences of another we have 'similar' ones. If I know what it is to be in love I can imaginatively empathise with someone who is in love, and part of this empathy can be the evocation of my own memories of love. And those memories seem often to consist in more than 'remembering-that', more than propositional memory. In memory feelings, emotions and sensations come back to us, are imaginatively re-constructed (try remembering what its like to wash in cold water on a winter morning, or the smell of chopped onions to get the sense of what I mean).

This could be used to suggest that there is no affective element in understanding, that what is crucial is cognitive understanding, the understander, through affective imagination, 'fleshing out' the picture. This argument might continue by saying that the involvment of the imagination demonstrates that whatever 'feelings' one might have in understanding someone in anguish or else in understanding a work of art (as being revelatory of the srtist's affective states), they are not real feelings, they are counterfeit'feelings', created in imagination, not elicited in any real life experience. Any other feelings we have, feelings of helplessness in the face of tragedy, or feelings about an art work which are not the result of imaginatively putting oneself in the place of the artist, would simply be facts about our own responses to some state of affairs and should not be written in to our understanding of the state of affairs even though our awareness of such affective responses may contribute to our self understanding.

What this argument says (echoing Ryle in 'Concept of Mind) is that when we imagine an experience we do not truly have it. This seems clearly to be the case when eg. we imagine we see Scarborough castle when we're not looking at it. Here imagining we see Scarborough castle seems to entail that we're not really seeing it. But the same doesn't seem to be true for the affective imagination. In 'entering' a film imaginatively we suspend belief, we really do put ourselves in the position of the protagonists, feeling what they feel. Watching a Bruce Lee film with an audience of school children it becomes clear that the vast proportion of the audience is actually 'in there' with Lee, wielding fists and staff, juggling dangerously with nun-chaku (the rice flail which peasants adapted as a weapon), battering baddies and righting wrongs, feeling righteous indignation towards the villain and exhultant relief as the hero, Lee, inexorably vanquishes all evil-doers. These feelings are not mere pretence for all their dependance on imagination, though the feelings generated in entering into a Kung-fu movie are certainly less profound, and less disquieting, than those we experience in entering into a film like Ingmar Bergman's 'Persona'. Here the merging and changing of the personalities of the two women (patient and nurse) in their isolation disturbs us deeply. In entering Loach's 'Family Life' we are carried helplessly along the progression of a girl from being psychologically disturbed to catatonia, 'helped' along by insensitive family and doctors, and it is anything but enjoyable. In cases like these last two the director seeks to have us empathise imaginatively with the feelings of the characters in order to give us his view of some aspect of human life, and the success of such works has much to do with the way we can enter into them, the way we are seduced into giving up the stance of independent observer and, instead, to identify with the protagonists and, through imagination, come to feel what they might feel.

It seems reasonable to say that with respect to many works of art our affective responses play some part in our understanding of the work insofar as those responses are not just elicited by the work as physical object, but instead are generated imaginatively in engaging with the work as (iconic) symbol, as we enter in to the 'world' of the artist and feel what he intends us to feel. We may later reject the world-view the artist offers us, for instance if we decide that it is unreal, a distorted picture of how things are in the world, but the feelings we have whilst our (cognitive) critical faculty is suspended, when we are 'inside' the work, are nonetheless real for all that. The feelings generated in affective imagination are very real, all too real in some cases - there are always some works we regard as profound but avoid because their profundity focuses on aspects of life we find disquieting. Some works, it is true, seem not to work like this. Music and abstract painting seem to lack reference to shared experience in that they don't provide the overt cognitive 'cues' which can make literature, theatre and film more easily accessible. Here again there are difficulties that I cannot deal with. All I can do here is to observe that in some cases, notably understanding how people feel and, by extension, understanding how a character in a fictional work might have felt, our affective responses, generated in imaginatively putting ourselves in the situation of the person or character, seem to add to our understanding. But our affective responses could only constitute understanding insofar as we are right, insofar as our feelings do approximate those of the other person or the intended (by the artist) feelings of a fictional character.

The key notion in all this must be that of the imaginative transcendence of self, the ability to put one's self in another's situation. The central problem in saying that this ability can result in understanding

(of an affective rather than a cognitive sort) arises over the question of accuracy. We may think that we've approximated another's feelings and we may have transcended our selves e.g. if we like dogs but have managed to put ourselves in a frame of mind where we can see dogs as dangerous and threatening (say by imagining ourselves in a city destroyed by war where dog packs hunt anything that moves). But how can we be sure we're right, that we're not merely deluding ourselves? In some cases we can just ask the relevant person (in art, the artist), but this doesn't always work. People are often confused about their feelings and artists don't always plan works explicitly. Characters in art take on lives of their own in many cases, an artist often comes to see his creations in a different light as he produces his work, the character can come to make demands on the artist, an episode written into the outline of a novel can be altered or dropped as the artist 'realises' that 'this' character wouldn't react like 'that', that the projected episode could only work if the fictitious person acted out of character in a way that would disturb the unity of the character and of the work.

Nevertheless there do seem to be cases, especially in understanding other people, where we do seem to manage to understand how people feel and where this understanding allows us to act appropriately, in a way that helps the person we have understood to come to grips with their inner turmoil. But here we don't, as with some art works, give ourselves over to the feelings and emotions. Rather we see what actions would help us if we were in this state and act towards the other person accordingly. It seems to me that we can do this, particularly with people we know well, and that our success in helping others in handling the problems of their inner lives is evidence that we understand their feelings and emotions correctly. But there is a cognitive element in such understanding.

It is fairly obvious that most people who try to write philosophy (for example) come to a point at some time when uncertainty about something makes it difficult to go on. Almost every philosopher must have had this experience and can help others in similar situations, can give reassurance and encouragement. The cognitive element, propositional knowledge, is certainly present in such cases. That there is also an affective element seems to depend on the assertion that someone who had never experienced this 'angst' wouldn't fully understand someone going through the experience. Here the lack of personal experience would render the imagination incapable of giving an affective understanding which consisted in more than the capacity to know that such-and-such statements were true of 'this' person, an understanding of how someone feels.

We are now up against the distinction, the contentious distinction, between theoretical knowledge and acquaintance knowledge. In the realm of the cognitive the distinction has been attacked by saying that in principle anything we know by acquaintance can be stated in propositional form even though, because an infinite number of true statements can be made about any state of affairs, we can never exhaustively represent knowledge by acquaintance in the form of a conjunction of true statements. This impossibility consists in the impossibility of writing down an infinite number of true statements, not in any other difference between the two sorts of knowledge.

That there is something more than the cognitive involved in understanding phenomenon of which affective states are in some sense a part might be resisted by saying that what is crucial in communicating emotions and feelings correctly is the sign (index or symbol) which expresses them. Learning to read the signs correctly could be said to be the central element in understanding others and this would seem to be a matter

of cognitive understanding, of recognising 'this' piece of behaviour (linguistic ot otherwise) as a behavioural 'symptom' of the other's state. This line of argument could evoke Wittgenstein's 'beetle in a box' example by saying that questions about the identity of feelings are irrelevant to understanding someone's sadness (say). What is crucial is the public concept of sadness. If I imaginatively superimpose the feelings I recognise as sadness on my judgement that someone else is sad there is no way in which I can claim those feelings to be constitutive of a better understanding since I have no way of justifying the claim that there is any sort of similarity or correspondence between the actual experiences which two people have over and above the fact that they are both subsumable under the public concept of sadness.

This line of argument presupposes the essential privacy of experience, but not in a way that can be ruled out as being dependent on an incoherent interpretation of the private language argument. It says that the experiences may well be there, but that they can play no part in an intersubjective understanding as the criterion of sameness of feeling we use in language can make no reference to the phenomenological nature (the subjective, rather than the public nature) of the experience. And any attempt to suggest that the actual affective experience could contribute to some essentially private understanding would fall foul of the full force of the private language argument.

Even if we abandon the privacy of the actual experience of being (e.g.) angry or sad by accepting, for the sake of argument, the existence of empaths, people who truly experience others' feelings, we don't escape from serious problems. Having an experience and understanding it are not the same thing. This is captured by the adage, "Some people have a thousand experiences, others have the same experience a thousand times." Seeing an event is one thing, correctly assessing its significance is another. We can

all, surely, recall examples where we went through some experience in bewilderment, only later realising what had been going on. So even if some people are truly empathic (in a psychic sense yet to be explained), their ability to feel what others are feeling should not be written in to their understanding as such. Their empathy would only provide them with additional data, data not available to the rest of us, their understanding would still consist in the possession of appropriate conceptual abilities. So even though the empathic feelings of such people would constitute an aid to understanding others, those feelings would not be a part of their understanding. Even though an empath (in the psychic sense) would, because of his empathy, be likely to be better at understanding others' affective states, his understanding would still be essentially cognitive although richer because it would draw on direct acqaintance with its object as opposed to relying on 'second-hand' information derived from reading ths signs (both symbols and indices) which are the expressions of the affective states.

I think that we must accept that the existence of such empaths is a possibility, at least I cannot think of an argument that would demonstrate it to be a logical impossibility. But this cannot help us with any affective component in understanding many works of art. We might make something of it in the context of live performance in music or the theatre, but not with literature, or recordings of music, or films as in such cases there is no existing state of mind, at the time we engage with the work, to emphathise with. so we are left in a great many cases with 'imaginative empathy', with explaining any affective involvement with works in terms of our ability to imaginatively put ourselves in the position of a character in a work and/or with the artist as he was when producing the work. And here we have greater problems than arise in the case of an (assumed to exist) empath, because we don't know how to tell whether our affective imagination has got it right. In any case the same problem occurs here as in the case of

the empath. Even if, in affective imagination, we do arrive at the right feelings and emotions, having the experience is still not understanding it. The understanding part of the story still seems a matter of grasping the significance of the experience correctly, and this still seems a matter of conceptualising it correctly, still seems a cognitive matter.

Some people might want to resist this conclusion at least in the case of very strong and unusual feelings and emotions, for instance in the case of suicidal impulses. In such cases, it might be suggested, someone who claimed to understand how a would-be suicide felt would be admitting to having felt the same way himself. The first thing to note here is that ..'having felt the same way' cannot be interpreted as implying some phenomenological identity or similarity between the actual experiences, the 'beetle-in-the-box' argument rules this out. So, .."having felt the same way," must be interpreted as something like, "having been in an affective state which disposed one to attempt or at least seriously entertain thoughts of suicide," in this case. So the claim that no one can understand how someone who is suicidal feels who has not experienced suicidal feelings themselves is the claim that such understanding is only accessible to those who themselves, at some time, havefelt disposed to kill themselves or, at least, to seriously contemplated suicide. Suicide is an extreme case, but such arguments might also be raised in discussions of alcoholism, rape and even the example I mentioned earlier, the problem of understanding the victim of a robbery.

In all such cases I can accept the proposition that as a matter of contingent fact it might be easier for someone who had experienced similar states to understand people in those states, but I must reject any attempt to assert that there is any logical necessity involved. It seems to me that it is possible for us to understand states which we have not ourselves experienced. We can,

for instance, come to understand the feelings of frustration of 19th century miners in France by imaginatively entering into a novel like Zola's 'Germinal', or the feelings of helpless impotence of the defendant in Kafka's 'The Trial'. It might be so difficult to imaginatively empathise with would-be suicides as to be practically impossible for any but a gifted few, but I can see no reason for concluding that it is logically impossible.

To decide on suicide is to decide to abandon the attempt to handle life. It seems to me that such a decision is not entirely alien to other, less dramatic, decisions we all feel inclined to make from time to time. Most people engaged in difficult endeavours find themselves, at some point, feeling uncertain about whether they can go on and often this is connected with a certain weariness, a sapping of the will to continue. It doesn't seem impossible that someone who had never seriously contemplated suicide could draw on such experiences as a basis for imaginatively empathising with someone in a suicidal state.

This may seem like an admission that feelings do have a rôle in understanding other people. In general we can consider the case of two people, A and B. A's problem is with understanding how B feels. B is experiencing an affective state (x) which disposes him to produce certain modes of overt behaviour (d). So B is disposed to d because of x. Now A' understanding of B's disposition to d cannot be a matter of A's acquaintance with x because acquaintance with x requires either that A is empathic (i.e. really perceives B's feelings) which, whilst not logically impossible, is clearly not generally the case or else that A has had an experience phenomenologically identical or similar to x, which may or may not be the case (we have no way of knowing since such identity/similarity is irrelevant to any public concepts). And anyway questions about the

phenomenological similarity to x of any feelings A is having, or has had, are irrelevant to A's understanding simply because having an experience is not understanding it (or, more precisely, grasping its significance correctly).

Nevertheless B's having x is an important part of the explanation of his disposition to d. Identification of x with a disposition to d would lead us to analyse A's understanding of B's feelings in terms of nothing more than A's knowledge of the fact that B is disposed to d and this hardly seems describable as understanding how B feels as it leaves out all reference to affective states. What seems to be the case is that to understand how B feels A must recognise B's d-ing (or B's preparations to d) as symptomatic of some affective state, though not necessarily of x as it is unclear how we can support a claim to have identified the actually state (phenomenologically speaking) accurately. It would seem that A's understanding of how B feels must depend on his understanding of himself as having an affective life which can effect his overt behaviour and of drawing on and, where necessary, imaginatively augmenting and transcending his own experience so as to 'see' what affective states might dispose him to d. If A had never experienced any affective responses that had disposed him to behave in certain ways he would, it seems, be incapable of understanding B's feelings, for he would have no grasp of the way in which affective states can colour judgements and hence effect behaviour.

The central point here is that if A had no affective life, experienced no feelings and emotions then he would understand the language of feelings etc. only as ways of describing overt behaviour, he would not relate the overt manifestations of anger to feelings of anger as he would lack the inner experience which, for normal people, the public expressions of anger (including linguistic expressions) are symptomatic of. Such a person would be able to use emotion language but would not understand it

fully, he would understand it only as talk about certain sorts of overt behaviour, not as talk about inner states. The public concepts would not give him an ability to understand certain aspects of his inner life as he would lack precisely those elements in his inner life that the rest of us use the language of feelings and emotions to talk about. Thus, if A had no affective life himself, he would not adequately understand the language of feelings and emotions and hence would be incapable of understanding how B felt. Even if he did correctly identify B as being angry, he would be using 'anger' as a label for B's behaviour, not as a description of x, the inner state which disposed B to behave in an angry fashion. For A 'anger' would describe d whereas the rest of us would say that x was anger and d the overt manifestation of that affective state.

Thus our feelings and emotions do play a part in understanding other people insofar as having feelings and emotions plays a part in our general understanding of the sort of language we use for talking about such things. What is the case is that if we had never experienced feelings and emotions we would not fully understand words like 'fear' or 'anger' (etc.) as referring to affective states rather than overt behavious. This would constitute a failure to fully understand the relevant mode of language, which would lead to an inability to understand how other people feel. This failure would not arise from a failure to grasp the phenomenological nature of others' affective states, but from a failure to understand what an affective state is. The failure would be cognitive, a failure to understand emotion-concepts correctly and hence a failure to 'see' an important aspect of people's inner lives. Similarly, in the case of understanding someone in an affective state we ourselves have not experienced, we draw on our own experience of related states not as a way of having the same (in some phenomenological sense) experience but as an experiential ground for our cognitive understanding.

In the sense that our cognitive grasp of the concepts

we use in talking about our affective lives is dependant on our having affective responses which we subsume under the publicly established comcepts I am happy to conclude that there is an affective element in our understanding, though the rôle of the affective element here is in giving us a proper grasp of the relevent concepts and so serves only to give us a proper cognitive understanding of what emotion-language is about. I am opposed, however to any talk of an affective aspect of understanding if it is being suggested that my affective responses to some 'thing' (a book, a person or whatever) I am confronted with is, in the context of confrontation, to be seen as part of my understanding of that 'thing'. I can see that such feelings may facilitate my coming to understand, i.e. my acquisition of a conceptual framework which would make me a 'knower' with respect to relevant phenomena, but to make them part of the understanding seems wrong.

An empath might possibly feel what someone else feels or someone might imaginatively generate exactly the right feeling, but having the feeling is not understanding it and the notion of 'right feeling' needed in the case of imaginative empathy is, as I have shown, problematic in the extreme. In other cases, for instance understanding maths, I cannot see how having feelings is part of understanding. It might be suggested that feelings of 'rightness' can tell a mathematician (or some other specialist) that he's on the right track, but such feelings often mislead and equally often seem absent or else are unclear (as any researcher should know). In any case even when such feelings do show the way they are indicators, the understanding is surely a matter of whether the theory checks out not whether the researcher feels right about it. Feelings I might have whilst trying to understand something undoubtedly have some bearing on the question of whether or not I come to understand it, similarly it seems reasonable to suppose that most people 'feel better' about what they can make sense of than about what they find incomprehensible. But, for reasons already given, I see

no general justification for arguing that, if anyone understands some x, then they have feelings about x which are not merely contingently associated with x but are logically necessary element in their understanding. The only exception to this rule is in our understanding of emotion language, but this necessity, that we should have some affective experiences if we are to properly understand emotion-language, in no way entails that in a specific case where we are using our general understanding to come to know how someone feels we are only acquiring such knowledge, only truly understanding the person we are engaging with, if we are having certain affective experiences ourselves.

Thus I am forced to conclude that understanding is essentially cognitive. But although I cannot justify writing the having of feelings and emotions into the concept of understanding (except in the case of our general understanding of the language of feelings and emotions) I can say that our affective responses have a rôle to play in our acquisition of understanding. Even though understanding proper must still be analysed in terms of possessing an appropriate (for the object of understanding) conceptual framework, we must remember that we can acquire understanding directly through engagement with the world as well as through 'internalising' explicit theory. And in engagement with the world (and we can include explicit theory here) we not only make the conceptual accomodations constitutive of understanding, we also respond affectively. A favourable affective response is likely to lead us to take more interest in the aspect of the world which elicits it and this seems likely to lead us to acquire more understanding - this is what I argued in my discussion of the rôle of intrinsic interest in systematic enquiry. Conversely an unfavourable response can clearly lead us to 'switch-off', to disengage, and that will lead to our failing to acquire understanding. This, again, is a contingent matter. We can, intellectually over-ride unfavourable responses in cases where we judge the

phenomenon to be, for instance, important though unpleasant. So we can concern ourselves with trying to understand the psychological 'mechanisms' which allowed concentration camp commandants to live nearly normal family lives when off duty whilst committing genocide when on duty because this ability to compartmentalise, to 'double-think', is an important feature of the human mind, though its manifestations are generally distasteful to those who value reason.

We cannot ignore the emotions in education not because they are part of understanding, but because they effect our ability to acquire it. Imaginatively putting ourselves into the place of a character in a novel is not a logical pre-requisite of understanding it, but it can help our understanding in that 'seeing things from the inside' can be a way of engaging with the work more completely and a more complete engagement is likely to result in a more complete understanding. There is no logical necessity about this except in negation-failing to engage with something will of necessity, lead to no understanding being acquired. Only if we engage with something can we hope to understand it, but engagement cannot guarantee understanding. We all have limitations, there are always some areas where understanding eludes us no matter how hard we try, though it seems unlikely that there are many people who, if given the right help, would remain incapable of grasping such things as how to read and basic arithmatic.

Education of the emotions and of the imagination must be important as a way of teaching people to engage sympathetically with others, a part of learning how to relate to other people and to art. And this must go hand-in-hand with self understanding. In learning to imaginatively transcend ourselves we must be both aware of our own feelings <u>and</u> aware that others may feel differently about 'this' or 'that'. In life we are simply faced with such differences in affective response between people. To deal with the problems that arise in inter-

personal interaction we must be able to sympathise with others, to disagree and not to judge, to be able to 'see' that others are not ourselves without constantly raising questions about who's right and who's wrong. I'm not saying that this attitude is appropriate in all things, but it clearly is in many areas - in preferences in art, in love etc.. Understanding such things is, I believe, essentially a cognitive matter even though an adequate cognitive grasp of emotion-concepts (etc.) is dependant on our having had relevant affective experiences. But acquiring such understanding in particular cases must involve imaginatively putting one's self in the position of another. In this affective imagination must play a role, not as a way of revealing another's affective states, but as a way of allowing us to see them as beings who have 'affective lives', who feel and have emotions. Only when we engage with people at this level can we really begin to understand them as people. Thus our feelings and emotions, though they are not a part of our understanding as such, play an essential part in our coming to understand other people. The value of aesthetic education, from improvised drama, to playing/listening to music, to reading poetry must be, in part at least, derived from its role in educating our affective imagination and hence preparing the way for a more sympathetic engagement with others (and, hopefully, for the acquisition of a better understanding of other people and, by contrast, of ourselves).

Understanding, then, is essentially cognitive. The role of the understander's affective states is in giving him, through acquaintance with his own inner life, a deeper understanding of the language in which we talk about such things. Our affective responses, if appropriate, can also allow us to engage more sympathetically with other people (and with works of art) and, if we are intellectually able, to arrive at a better understanding of them.

Education and Understanding.

Fundamental tc this whole thesis is an assumption that I find very difficult to question seriously, but which now must be examined: that education, if it is to be at all worthwhile, must involve the educand acquiring understanding.

The first thing to say is that to some degree this must be correct, it would be absurd to argue that education had no links with understanding. But problems arise when we look at the central aims of education and ask whether the primary aim of education should be the propagation of understanding as opposed to, say, socialisation/preparation for citizenship or else the passing on to the young of their cultural inheritance. These alternative aims are not, of logical necessity, incompatible with the propagation of understanding; to an extent they presuppose it. If education is for citizenship then an educated man must know his place in society, must understand his native form of life to some degree. If education is about passing on a cultural inheritance an educated person must have acquired some sort of understanding of what was passed on.

But in some circumstances these alternative aims (and there may be other possible alternatives - the ones I've chosen are only being used illustratively as yet) could come into conflict with the aim of propagating understanding. In early 19th. century England the education of the poor was clearly seen by a large proportion of the aristocracy and the nouveau-riche industrialists as potentially subversive of the status-quo. The opposition of these people to mass education was only overcome by statements like the following from Patrick Colquhoon, an early advocate of elementary education, who said in 1806:

> "It is not proposed that the children of the poor should be educated in a manner to elevate their minds above the rank they are destined to fill in society..,Utopian schemes for an extensive diffusion of knowledge would be injurious and absurd."
> (quoted on p.8 of Denis Lawton's, 'Class, Culture and the Curriculum').

Here, in a rigidly stratified society, education of the masses was seen as a matter of preparing lower class children for, "the rank they are deatined to fill in society," a 'rank' determined by birth, not ability. This is education for citizenship in a harshly exploitative society and in such a context this aim can conflict with the aim of proagating understanding.

Education for citizenship in a context like that of 19th. century England was seen as a matter of preparing people for their place in an existing social hierarchy, it presupposed an unchanging social order, regarded education as an agency for the maintenance of an existing status-quo. Such education must, at some point, conflict with the aim of propagating understanding. Social institutions are conventionally defined, existing in a particular form only for so long as people acquiesce, tacitly or overtly, to the rules which constitute them. This being so it is the case that if there is anything in the world properly describable as a social institution (in a sense of 'social' which implies 'conventionally defined') then, in principle, that 'thing' can be changed by rational planning. And the 'in principle' here means that this is a possibility even if, in some societies, widely held irrational beliefs or a repressive ruling elite make such change difficult to achieve. An education for citizenship designed to maintain the existence of a social order would have to repress this understanding if the existing society was stratified rigidly with, for example, a large and poor working class living at subsistence level. If people with little or nothing to lose get the idea that things could be otherwise, be

they 19th century English workers or 20th century black South Africans, they become politically dangerous from the point of view of the ruling élite. In a society of this sort education for citizenship would involve the educand understanding the nature of his society to the extent of knowing the rules, but not to the extent of understanding those rules as conventionally defined and hence changeable. The education given might misrepresent society (as ordained by God or as a natural state of affairs) or might simply ignore social and political education as areas for study, teaching acquiesence to the existing order as part of a 'hidden curriculum', but leaving the educand ignorant of the essential difference between natural phenomena and social institutions. For political reasons, in a less than ideal state, education for citizenship might lead to at worst the propagation of misunderstanding and, in less bad circumstances, to the ignoring, in education, of large areas of important problems (most often social and political).

Similarly the educational aim of passing on a cultural inheritance need not conflict with that of propagating understanding, but might. There are problems here with modern states as we might doubt whether the 'society' consisting in all the people within the national boundary of, say, the United Kingdom, has enough cultural unity in terms of shared values, beliefs, and attitudes, to make 'passing on the culture of a society' an aim which can give a unified curriculum within the state's education system. But even putting such problems to one side we can see that passing on a cultural inheritance could lead to conflict with the aim of propagating understanding. Just because 'these' attitudes, beliefs and values have, traditionally, been held in our culture, we might say, there's no guarantee that they're correct. Any culture might make mistakes or, again, be ruled by an elite which imposes certain values etc., artificially. Taking the propagation of understanding as the prime concern of education requires us to be critically aware of our cultural inheritance, to evaluate what is handed

down to see if 'this' attitude is appropriate, 'this' value rationally tenable 'this' belief true. This critical awareness is part of understanding and must be fostered if the propagation of understanding is taken to be the prime concern of education. But if we take passing on a cultural inheritance to be more important we might regard the giving of cultural identity, getting people to hold 'these' values, beliefs and attitudes, as being more important than getting people to critically evaluate what is passed on to them. Thus it is possible that the aim of passing on a cultural inheritance could conflict with the aim of propagating understanding in an actual education system. The question which now arises is that of why we should regard the propagation of understanding as the central aim for education, an aim which has priority over other aims so that although other aims can be pursued in education they should not (for whatever reasons) be pursued at the expense of the propagation of understanding.

Before I try to answer this question I shall take time to remove the possibility of confusion which could arise out of the ambiguity of the concept of education and over the matter of whether we use 'being educated' in the sense of an achievement or of a process. We could say that the aim of being educated (in a 'process' sense) is to become educated (achievement sense). We could then distinguish between education and schooling (where schooling implies being exposed to an institutionalised system of instruction of some sort) by saying that, since the notion of a self-educated man is obviously coherent, 'education' is a wider notion of 'schooling' and that we should not confuse the two. From here we could focus on the notion of being educated (achievement sense) and ask what must be true of someone before we would describe them as educated. We could then suggest that we wouldn't call anyone educated who understood nothing at all and hence that education must involve the acquisition of understanding. This, however, isn't compelling.

It could be accepted that the concept of education is

wider in scope than that of schooling whilst maintaining conceptual ties between the two, with 'education' appearing as parasitic on 'schooling'. In the context of a particular society, it could be said, our paradigm example of education is what goes on in schools. What the school system seeks, as a matter of contingent fact, to achieve constitutes the aims of education in that society. Education appears as a wider concept than schooling only in the sense that what successful schooling (i.e. institutionalised education under this view) would lead a student to achieve could be achieved in other ways. But this doesn't invalidate the contention that our notion of an educated man (achievement sense) is to be analysed in terms of someone who has achieved what a successful schooling (one in which what was intended/ aimed for had, to a reasonable degree, been achieved) would have led him to achieve. On this view what counts as education depends on the society/culture being looked at and is determined by looking at what counts as being successfully schooled in the specific context.

If this indicates nothing else it indicates that attempts to argue from the concept of education to the conclusion that the primary aim of institutionalised education should be 'this' or 'that' must be suspect. In particular it is no use arguing from a concept of education which has the propagation of understanding written into it and arriving at the conclusion that a school system which pursues other aims. even when they are in conflict with the aim of propagating understanding, is not dealing in education. Such an argument would appear viciously circular.

Whatever our concept of education it is clear that the crucial issue at stake here is the question of what school systems, institutionalised systems of instruction/ education (taking education in the second sense just elucidated), should aim to do. So questions about the relation between education and understanding can be

translated into questions about why we should (or should not) regard the propagation of understanding as the primary, the over-riding aim of school systems/institutionalised systems of instruction/education (again taking 'education' in a very thin sense descriptive of what schools seek to achieve and having no essential, cross-cultural content).

I will approach this question by asking why someone might want to 'educate' in a way which did not propagate understanding. This approach does not beg the question, "Why understanding at all?" precisely because understanding must play some part in education whatever its fundamental aim is taken to be. If education is to be acquired through instruction (by teachers or books or computers) rather than just by living in the world, the educand must be able to understand what he is told to some extent. If instruction via symbolic communication can be educative, then grasping the significance of the symbols used, understanding what is said or otherwise displayed, is an essential element in being (in the process of being) educated.

This move, towards focusing attention on the question of what schools should aim to achieve, could be resisted by asserting that life in itself is educative. But this move must be backed up by saying that in living in the world we learn 'this' or 'that' and that institutionalised learning is only one way we can learn these things. This would mean that learning 'these' things (whatever they are) is constitutive of being educated and this learning would itself involve the acquisition of some sort of understanding (that 'this' is what 'one' does in 'these' contexts at least). If we didn't restrict the notion to some degree, then education would become synonymous with living and hence redundant. So education must involve understanding to some degree.

The idea that education might not involve understanding at all leads us into the realms of absurdity. Children come to school understanding a great deal already, an institution concerned with destroying this understanding

would seem absurd, an institution not concerned with adding anything to this understanding would seem an expensive and pointless thing. This only leaves the possibility of an institution concerned with the propagation of misunderstanding or one concerned only with the propagagtion of understanding in certain limited areas or one concerned with both of these things (in different areas). Being educated (achievement sense) in the context of such an education system would consist in understanding some things whilst holding fallacious beliefs, constitutive of misunderstanding, about other areas.

If we write in the holding of false beliefs about some things into the notion of being educated we are holding a view of education which still involves understanding, but now the understanding is not of 'these' states of affairs, rather it is of what 'one' says when confronted with 'these' states of affairs. The understanding being propagated is constitutive of being able to make the right noises in relevant contexts, it is not an understanding of the phenomena being confronted in those contexts. It is clear that 'making the right noises' in the context of 'education' in which misunderstanding is being propagated comes down to saying what one, under the relevant norms of behaviour/conventions is expected to say, not saying how things are (this would be symptomatic of understanding). So the next question to be asked is about the point of making false statements about things - what is the point of putting time and effort into propagating false beliefs, into systematically deceiving people obout how things are? In other words, since any aim of education presupposes that some degree of understanding of at least some things is involved, why should anyone want to give any other aim priority over the propagation of understanding so that when the two aims conflict the other aim takes priority and either no effort is made to propagate the relevant understanding or else misunderstanding is actively propagated?

It might help us to answer these questions if we look

at an imaginary subject which we will call 'physics' but which is predominantly fallacious and hence reveals little or nothing about those aspects of the world of which it purports to treat. The question now is: what point could there imaginably be to learning this 'physics'? This subject might be richly articulated, its theories complex and 'covering' a wide range of 'topics', but since it is fallacious it is of little or no use in terms of giving us understanding which enables us to see how things are and hence to handle many of the problems with which the inanimate world confronts us. Why then might we learn it when it is cut off from those aspects of the world it purports to tell us about, when learning it gives us understanding only in the same sense as that in which we must understand the rules of chess in order to be able to play it?

A skilled 'physicist' of the sort under discussion would have no special skills with respect to handling the problems of the inanimate, he would be able to pass examinations and to take part in ritual discussions of his subject. I say 'ritual discussion' as the nature of the 'physics' he has learned would preclude any rigorous critical analysis - that would be likely to reveal the 'conventional wisdom' which the subject consists in as fallacious. The only value of such a 'physicist's' education would be in terms of social acceptability within the community of 'physicists', an incestuous clique where making the right noises, saying the right things in the right contexts, was all and where anything other than conventional 'mouthings', whether symptomatic of understanding or not, was de-valued, or, perhaps, even regarded as the mark of vulgarity and socially unacceptable.

If we generalised this picture to all education we would get an education system in which the primary aim was socialisation, but the society for which this education prepared people would be a very odd one. Nobody in such a society would understand anything but inter-personal etiquette and even here the understanding would

be shallow, consisting in a grasp of what constituted correct behaviour in various social contexts and nothing more. Anybody who managed to acquire,through their own experience, a more complete understanding of the nature of their society would have to carefully conceal the fact from others in order to avoid sanctions being taken against them.

This imagined society would, in fact, be so completely cut off from an independent reality, so completely decadent, that it could hardly survive. Academics might be given positions of prestige, but they would be not at all equipped to deal with the problems the world poses. In the end, it seems fairly abvious, a society in which education came to be so completely divorced from the aim of propagating understanding would be destroyed by events which would impinge on it but which no-one would understand adequately, in a sense of 'adequate understanding' which implies that possessing it would enable someone to see how the problems which those events pose for the society might be solved. My point is that although understanding might not always allow us to solve problems in that our understanding of something may not always be adequate or that irrational pressures might militate against our applying a solution which our understanding suggests, a complete lack of understanding of anything but social 'etiquette' would leave us without the ability to solve problems which were not problems about what 'one' should do/say in 'this' context. Being ignorant of the nature of the various aspects of the world doesn't stop the world posing problems for us, it only renders us incapable of doing anything about them.

An education system of this sort would be socially disastrous no matter how much people believed in what was taught. The society would be rigid and unchanging and unable to cope with the problems the world posed for it. Such a society is an artificial construct, though in the past, and in some cases at the present time, societies dominated by religious world views have shown a tendency

to prefer the propagation of uncritical adherence to dogma over the inculcation of a deeper, more reflective and hence critical understanding. More prevalent is a situation where understanding is propagated in ideologically more neutral areas whilst in more sensitive areas critical reflection is seen as subversive and adherence to dogma encouraged. In areas like maths and physics the propagation of understanding is seen as central whilst the political sensitivity of things like social studies and economics leads to the propagation of particular ideological views. Thus ideologies are often views which, like those of Marxist and laissez-faire economics, were originally generated by people in pursuit of understanding but which later generations have come to venerate for a variety of reasons so that, in specific societies, questioning them has come to be seen as an act of subversion rather than as an attempt to discover their weaknesses and (hence) to formulate a more accurate view, to achieve a better understanding.

Insofar as attempting to propagate a more subtle understanding of some areas in some societies is likely to be regarded as subversion a teacher who insisted on the primacy of the propagation of understanding as an aim for education, even in sensitive areas, would be putting his head on the chopping block. More importantly, from a moral point of view, any teacher who encouraged critical awareness in his pupils on issues where anything but complete adherence to a dominant orthodoxy is likely to lead to conflict with the state would, in effect, be putting his pupils' heads on the chopping block. The dilemma here is whether being right, in the sense of standing up for the truth (or what we can rationally demonstrate to be a more accurate way of looking) is more important than social acceptability, or success in material terms or even, in an extreme case, personal survival.

One view might be to say that to give pupils

understanding which might get them labelled as social deviants does them no good at all and that the teacher who is the root of all their troubles is morally culpable, the question of the truth or accuracy of the view he propagates being irrelevant. Against this we might raise the question of what sort of society we're talking about. Surely a teacher who taught that the mass slaughter of Jews or Negroes was perfectly alright, because Jews and Negroes are an inferior species more akin to pigs and cattle than 'real' people, would be morally culpable even if a failure to teach such things would get him into trouble with the state. And we might feel that in such an extreme situation those who say nothing in the face of atrocities were morally culpable just for their silence in the face of what they must surely have known to be a paradigm example of unmitigated evil-doing. Bonhoeffer was hung by the Nazis for asserting that the mass murder of Jews was wrong. We may lack his courage, we might keep our heads down whilst he stood up to be counted - and hung. But if we believe that he was right, if we regard him as almost a saint and his death as martyrdom, we can't just turn round and say, "But he was a saint, we can't all be saints," and then think that our inaction is justified. To say of someone that his actions are those of a saint is to say that our failure to follow his example is a result of our own inadequacy. In failing to stand up against what is wrong we are surely culpable, our lack of moral fibre may mitigate that culpability, but it doesn't make our silent acquiesence morally right.

Of course this could be countered by saying that in the case of a Bonhoeffer or of a Thomas More facing death is not so great a trial as for others because their religious faith makes the choice between standing up for what's right and acquiescing to perverted convention appear as one between salvation and purgatory. For those of us whose faith is less sure, or even non-existent, choosing death or being a social outcast simply on a moral principle is less easy, the rewards of acquiescence are likely to be tangible whilst standing on principle may be

seen as the path to oblivion. I cannot offer any solution to this moral problem, it may be that the question posed has no general answer, must be answered by each of us in confrontation with particular situations, with our own consciences and our own faith (or lack of it). In a less than ideal world compromise is often the only solution and how far compromise can go before we betray ourselves completely is perhaps a matter for each person to reflect upon.

I would argue, however, that whatever the problems which arise in real societies because of adherence to ' irrational beliefs about the nature of things (the natural world or the social world etc.), dogmatic adherence to particular views is always unjustified. Our understanding of anything independent of our overt conventions is always uncertain and open to change - this is clear from earlier discussion. So dogmatic, unquestioning, adherence to any particular way of looking is always dangerous, even if the view is, at the time it is adopted (which may be the case, though it often isn't), the best account available of relevant aspects of the world. A failure to see the possibility of constructing a better account or a failure to allow such accounts to replace orthodox views, leads only to stagnation. Dogmatic adherence to demonstrably inadequate accounts leads only to an inability to cope with relevant aspects of the world. A society which, through through dogmatic adherence to inadequate views of the nature of social change or economics, leaves itself unable to cope with social and economic problems is a society heading for disaster.

I cannot accept the view that attempting to propagate a more subtle, reflective and critical understanding of social and economic problems is subsersive in the sense of promoting strife and unrest. A desire to understand and solve such problems, it seems to me, is likely to lead to a more stable society. People who understand what is involved, and see a general desire to improve our understanding and to solve social and economic

problems, are less likely to be impressed by demands for violent revolution than those who simply react emotively through frustration. So, I believe, an education system which ignores important areas like social and political education, or else seeks to propagate views which simply don't 'marry' with people's experiences in life, is more subversive in the sense of being likely to promote strife, than one which seeks to get people to understand, even if we must sometimes tell our pupils that our understanding is very poor as yet. My argument really comes down to the suggestion that people who see their home society as valuing understanding, as trying to understand important problems and to solve them, are less likely to become alienated from the political apparatus of the state, are less likely to become wreckers.

Thus, although irrational forces operant in real-life societies may militate against education being primarily concerned with the propagation of understanding, I think it is reasonable to suggest that where this occurs the state, to some degree, is in trouble. The ideal must be an education system which seeks to propagate understanding of all important areas. Contingent factors in different states/societies may require us to compromise this ideal, but the rational course must be to attempt to maintain the propagation of understanding as the central aim of education as far as this is possible. The propagation of understanding is an ideal which we should aim for even though contingent factors are likely to militate against our achieving it. It is the elusive goal towards which our small advances should be aimed.

The Curriculum.

The central problem of curriculum design is selection: there is just too much knowledge, there are too many specialist endeavours for us ever to introduce pupils to them all in school. So we need principles of selection to enable us to choose what should appear in the curriculum of an institution designed to give a sound general education.

It seems to me that the problem domains of the inanimate, animate, interpersonal, personal and absolutist give a general shape for a balanced curriculum insofar as these are areas of important problems the solution of which has led specialists in these areas to adopt different assumptions about what's being looked at. These different metaphysical assumptions lead to different 'forms' of knowledge being generated (through the use of different ways of looking).

One source of disquiet about my account of the different modes of understanding might come from those who see it as just another 'forms of knowledge'- approach to the curriculum. Such people might fully accept my classification as a general shape but would want to know how to go about selecting detailed content for the curriculum. Their mistrust of my account would arise from their recollection that the forms of knowledge derived by Hirst gave a general shape for the curriculum too, but that he could say little about the more detailed selection of curriculum content.

Hirst sees each form of knowledge as something like a way of looking and regards a liberal education as being a matter of initiation of pupils into the way of looking of each of the forms. To him the question of what precisely to teach appears as an empirical question about the best way, given the psychological facts about them, of giving pupils a reasonable idea of what each form is about. Thus Hirst's position on more detailed curriculum and syllabus

content is that it doesn't matter what is taught except insofar as the choice of subject matter must be designed as far as possible to facilitate initiation into the forms- this is a matter for empirical enquiry, not for philosophy. Given that it is difficult, for reasons which should be clear from my discussion of understanding, to accept Hirst's assertion that each form of knowledge has a clearly definable set of concepts and a logical structure, his assertion that choice of what to teach from each form is not a matter on which philosophy has anything to say becomes suspect. The question I must answer is that of whether my domains are any better than Hirst's forms in terms of giving criteria of selection that can help with deciding what precisely to teach.

I believe that my domains don't have the same problems as Hirst's forms because, although the different assumptions about the phenomena being looked at which have been made in the different domains do lead to different sorts of knowledge being generated, my account of the domains is linked not to the logical structure of the knowledge generated, but to the different sorts of problems which specialist enquiry in the domains attempts to deal with. I have further argued, in my discussion of the domains, that their importance is derived from the importance in everyday life of the basic problems (i.e. problems which can be seen as such from a non-specialist standpoint) with which they engage. In other words the domains cover a range of problems which confront us all in life and the importance of education in the domains derived from the fact that understanding what the problems are and, where we have the understanding, how to solve them makes everyday life more comprehensible and hence handleable.

Thus I have done what Hirst did not, namely suggested an answer to the question of why people should value the understanding generated in my domains. I have done this only at a general level, designed to show the value/ importance of the different domains, but my general position, that the value of the understanding gained depends on the

importance of the problems it was generated in engagement with, does give criteria for a more detailed selection of curriculum and syllabus content: what we should teach is to be decided in terms of what understanding is needed to enable us to handle important problems. Other considerations must play a part, especially phychological findings about what it is possible to teach to pupils of different ages, but the primary philosophical point is that we should teach, as far as possible (given the psychological and logistic contingencies) what it is important to know/understand.

I cannot, however, go on from here to derive a detailed account of curriculum content. This is because of my rejection of absolutism and my contention (in my section on absolutism) that, given the failure of absolutist metaphysics to establish establish criteria for absolute truth, the only rational course is to adopt the approach I designated rational peicemealism. This move, as I argued in earlier discussion, entails that I should give up the search for an a priori theory of value, instead accepting, in the absence of compelling arguments as to why they are wrong, that what people do in fact value/ regard as important is valuable/important (and also accepting the fact that future events may require us to revise some values which currently are held justifiably). Having abandoned the search for an a priori theory of value which (if found) would allow me to give a more specific account of what should appear in the curriculum I am unable to give such an account simply because my position on value makes the question of which areas from each domain are of sufficient value to require their inclusion in the curriculum of a school system designed to give a general education one which is, in part, empirical.

Given the requirement that such a curriculum must draw on all the domains the decision about what in any particular domain should be included, and what excluded, must be made in a general discussion of relative importance. Philosophers have a role in such discussion in terms of

revealing inconsistencies and demonstrably untenable values, but the basic question of what is important must be one on which many different groups within a society have views which should be taken into consideration. In the context of such a discussion aims like preparation for citizenship or the propagation of a cultural inheritance may quite properly play a part insofar as such things are regarded as important. I am wary of such aims if they are given priority over the propagation of understanding for reasons fully discussed in the section 'Education and Understanding', but if the priority of propagating understanding is accepted these aims can still play a part in assessing the relative importance of work in different disciplines and sub-disciplines within domains. Once the selection of areas to be included in the curriculum has been made specialists in these areas will have to be asked what sorts of thing are of central importance to particular areas and this selection, modified in the light of psychological and logistic constraints on what is teachable (given the pupils and availability of resources), will constitute syllabus content. Thus although I cannot give a fully specified account of what should be on the curriculum, my position on the value of understanding does give criterion of selection which will be of help to those planning a curriculum.

The central point about judgements on importance is that they should be rationally tenable. To pass on what is seen (within a society) as important without examining the question of whether it should be regarded as important, is, for reasons given, a socially dangerous thing to do. But much of what is seen as important in societies <u>is</u> rationally supportable and if we can propagate understanding from the domains, give our pupils knowledge of their cultural roots and prepare them for life-after-school in one package, that would seem an eminently sensible thing to do. I only become wary of aims like preparation for citizenship and passing on a cultural inheritance when the propagation of understanding is not given priority.

A failure to do this might make education valueless except in terms of social acceptability and a society going down that path is a society heading for disaster.

I don't think that philosophical argument alone can give us a specific curriculum content, only that philosophy can give a basic template, can suggest criteria for more detailed selection (i.e. importance of basic problems) and can play a part in the discussion of what, amongst those areas seen as important, can reasonably be accepted as important. The discussion of what is important enough for inclusion in the curriculum is one in which non-philosophical issues must play a part. But an important philosophical point arises from the idea that understanding a discipline must involve more than rote learning of its concepts and procedures as 'recipes' for answering exam questions, that it must involve seeing the discipline as engaging with basic problems, problems which are important beyond the boundaries of the specialist community. A curriculum of different subjects in which each subject is looked at in isolation from other subjects and from everyday life is unlikely to result in an inadequate understanding. Earlier discussion has emphasised that disciplines inter-relate in many ways and that the domains themselves are not distinct in any clear-cut way, the structure of the curriculum should surely reflect such facts.

Consideration of the nature of understanding should lead us to plan actual syllabuses very carefully not only to give pupils a grasp of such things as the language, concepts and procedures current in particular disciplines, but also of why those concepts etc. are appropriate for those disciplines. This involves giving pupils a view of the discipline as an historically evolving endeavour concerned with certain sorts of problem (and not with others). Further, disciplines must be shown as inter-relating. I don't take this to imply the necessity of a totally integrated approach where subjects disappear from the timetable. Rather I take it to require that what is taught to whom and when be planned so that,

for instance, when co-ordinate geometry is done in Maths, map-reading is done in geography. The teachers of different subjects should be aware of what's going on in other departments and make reference to it. In this way a subject like maths could, as it is taught, be related to geography, physics, and even needlework (curve stitching, designs in embroidery) amongst other subjects in a way that would make it more alive for the pupils. And pupils would receive constant reminders of what they had done - something which might well increase their retention of new ideas.

Planning such interaction would be a matter for individual schools and departments. Maths relates easily to the physical sciences, but there are other less obvious things that could be done. Making and playing musical instruments could relate music, maths, physics, woodwork and metal work (both practical and design skills) and even the art department could get in on the act. Even the English department could get involved (after all songs have lyrics) and, in the case of folk song, history, geography and social studies could contribute. I'm not suggesting that everyone should make and learn to play a musical instrument, this is just an illustration, but surely interdisciplinary co-operation on projects could work and surely teachers could devise schemes where different subjects, working at different times, could contribure to projects which would enhance pupils' understanding of all fields.

In saying this I am wilfully ignoring the fact that to implement a co-ordinated curriculum would take up a great deal of time, time which teachers, in Britain particularly, just don't have. In a time of economic difficulty we can hardly expect things to improve, But I think it is worth asserting that preparation and planning are of crucial importance in education as without them much actual teaching time is wasted or, worse still, does educational damage. We have known this for a long time yet teachers still have to do their

planning preparation and marking mostly in their own time. The extra work co-ordinating the curriculum would involve would be quite large and would need the commitment which many teachers at the end of a long day and faced with a pile of marking to take home with them, would be reluctant to give.

It seems to me that there are two possible solutions to this problem of how to improve schooling, one is a centrally planned compulsory curriculum, the other is to give teachers more time for planning and preparation. The former would be cheaper as the latter would require more manpower, but centralised planning bodies often become political arenas (the Schools' Council has often been attacked on these grounds), and when education gets buffeted by political tides nobody seems to benefit. More importantly what can be done in specific schools depends upon available resources, in terms of what equipment the school can afford, and also in terms of opportunities arising from the school's locality and the special skills available in the staff. These latter two factors are uncontrollable, not every school is a tube-ride away from the Tower of London and not every qualified teacher of technical subjects has a keen interest in motor bikes and a thorough knowledge of their mechanics. If planning is done at school level such chance opportunities can be exploited, if the detail of curriculum and syllabus content is imposed 'from above' the flexibility needed to exploit unique chances is likely to be lost. I would say, however, that if detailed planning at school level remains logistically impossible, or at least isn't done, a centralised curriculum body might be the lesser of two evils.

I will continue now by looking at the familiar subjects that get taught at schools from the point of view of each of the domains in an attempt to show that, if we approach the different subjects properly, the sort of curriculum found in schools can give an adequate representation of the domains and hence form the basis of a balanced education.

The inanimate.

In terms of subjects currently taught the inanimate is well represented in the curriculum of most existing school systems, even if, in this country, we have a shortage of qualified teachers of the physical sciences. We have physics and chemistry, or at least general science, on the curriculum of most schools as well as technical studies which seems to be moving away from being just woodwork and metalwork towards engineering studies in which the links between theory and practise in this domain can be brought out. Inclusion of geometrical and engineering drawing in technical studies is nothing new, nor, though it is not wide spread, is the inclusion of car and/or motorcycle mechanics. Closer co-operation with science departments must surely become (if it isn't already) part of this trend towards engineering studies.

Technical studies, being connected with practical skills in rather obvious ways, has less likelihood of being seen by pupils as just a game played at school than the pure sciences. In physics and chemistry there is a danger of packing the syllabus with theory to the point where little time is left for the inculcation of a wider grasp of what the physical sciences are about. This, I suggest, is likely to leave what is taught looking, from the point of view of the pupil, like little more than a series of recipes for answering exam questions and even successful students are likely to end up regarding the point of studying, say, physics as the passing of C.S.E./ 'O'/ 'A' level exams. We do not, it seems to me, give enough credence to the idea that we should attempt to show the physical sciences as traditions of enquiry which are concerned with the problems of the inanimate and which have generated a body of theory, underpinned by specialist concepts, in order to solve those problems. We teach what might be called the form of knowledge without putting it in its true perspective, withour relating it to the specialist form of life which generated it and, hence, without relating it to the non-specialist problems which

are the specialist form of life's raisons d'ètre.

The question of what should be taught in lessons in the physical sciences is one for specialists, but my contention is that specialists should ask themselves not, "What sort of theories should we select from the body of theory our discipline has generated?" but rather, "What should we teach about our subject so that those who learn it will have a reasonable idea of what our subject is about?" The answer will include not only a body of concepts/theory/skills to be mastered, but also some sort of historical perspective, a view of where the discipline is coming from and where it's going to, and why. And here, as in all subjects, a question which must be answered as far as possible to the satisfaction of pupils is that of why the subject is important. This can only be done by showing pupils that the specialist problems are linked to problems beyond the discipline, that the theory has implications for (and impact on) everyday life. When someone has this understanding the point of more esoteric work can be seen in terms of its importance within the specialist endeavour and hence, its indirect importance for our ability to operate in the world. Without this understanding the more esoteric theory gets the more pointless it appears (except, of course, for those whose interest is intrinsic).

The task of breathing life into dead theory is a non-task from the point of view of specialists, but not from the point of view of pupils. The theories of the physical sciences are relevant to all our lives, but we must show this to pupils, it is not enough to 'stuff theory in 'til it comes out of their ears' and hope that they catch on to the point of it all. One idea that I believe to be important is that of the co-ordinated curriculum. If teaching in the pure sciences is unrelated to teaching in technical studies we are just wasting a chance to enrich both areas by showing pupils how they inter-relate. What I am arguing is not that a subject-based curriculum should be abandoned, but that we should

re-appraise what is involved in teaching a subject by asking what sorts of thing we should include in a syllabus designed to inculcate an understanding of both the discipline as a tradition of enquiry and the discipline's body of theory as a way of looking at the world. Relating the discipline's interests to the interests of other discipline's (and contrasting these) is a way of doing this and it is clear that the 'practical' subjects have a part to play.

The animate.

Here we must include biology together with health education and sex education and with some parts of domestic science, where things like child development are taught. It seems to me, also, that P.E., besides involving playing games and physical training, can properly be seen to have a rôle in health education and in teaching about human physiology (e.g. the mechanics of running or throwing). P.E. teachers certainly learn much about such subjects before they qualify, but, I suggest, we don't seem to use their knowledge sufficiently when they get into schools. Human biology is as much an area to be taught by the P.E. teacher, it seems to me, as by the biology teacher. The link lies in the relation between theoretical descriptions of human physiology and the physical abilities we have. A runner who grasps the theory of the mechanics of running has both increased his theoretical understanding of his own body (and others' bodies) and arrived at a way of looking at what he does when he runs which should enable him to alter his style and hence run faster.

The link between ecology and some areas of geography should be clear. Explaining the location of cities or the incidence of different sorts of agriculture or of a fishing industry are related to the sorts of pictures ecologists build up of food chains and the general interdependance of life-systems. In fact ecology is as much a part of geography as of biology. Again here I cannot usurp the specialists rôle in selecting detailed content for the curriculum, but again, the important idea to keep in mind is that mastery of concepts, procedure , etc. is only a part of understanding a discipline. The design of the syllabus must be informed by a desire to show pupils that the discipline is an evolving endeavour concerned with the problems of the animate, problems which arise in the world, which are more than esoteric puzzles. The aim must always be to achieve both mastery of a way of looking and to see that way of looking as illuminating

the world, as making the world more significant-for-us and hence as enabling us to find our way around in it/ to handle it more efficiently.

I won't go through a whole host of illustrations here, I think the basic points made earlier generalise easily to any subject. In helping pupils to understand a discipline we should be concerned with showing them the discipline as a form of life concerned with certain sorts of problem but not others, we should be concerned to inculcate a reasonable degree of mastery of the relevant way of looking and we should be concerned to show our pupils the importance of the endeavour (by relating specialist problems both to the problems of other specialities and to problems which impinge directly on everyday life). It seems to me that the main problem we have now is that we overemphasise the second of these concerns at the expense of the other two. The domain of the animate is reasonably well populated in terms of subjects on the timetable, the problem is that what we teach tends to misrepresent the subject: too much 'dead' theory is taught and too little time is left for, and attention given to, breathing life into it by showing pupils the whole point of having such theory in the first place. This failing, though, isn't unique to the disciplines in the animate. Generally in education we seem to emphasise the remembering of information without enquiring into the question of whether any real understanding (of the theory as something more than material for regurgitation in exams) has been achieved.

The Interpersonal.

The teaching of language skills, social studies, some areas of geography and of drama of certain sorts (like improvised rôle-play) can constitute education in the interpersonal and the study of both history and of literature have a part to play here. The main problem in the interpersonal is the contentiousness, from one point of view or another, of virtually all theoretical descriptions of society and social change, including theories in economics. In the physical sciences and the life sciences we find it relatively easy to select which theoretical way of looking to teach school kids. This may not always be the best available way of looking for practical reasons- we still teach a predominantly Newtonian physics, for instance, simply because the Einsteinian paradigm is too far from our ordinary language ways of looking for 'direct entry' to be feasible. We teach classical physics as a fairly good way of looking and one which will open up the way for entry into the rather disquieting world (disquieting in its contradiction of our common-sense understanding) of relativistic physics where time and space are variables. But theories in the social sciences are so diverse and mutually contradictory that selecting one approach is unjustifiable. If we want to teach politics or sociology we must refrain from telling pupils, "This is how things are," and must instead select the main strands of theory and tell pupils, "This is how some people have said how things are - what do you think?" Since we have no generally accepted answers we must introduce pupils to the problems, give them an understanding of the answers that have been offered and their short-comings and tell them to make up their own minds. If we do anything other than this we are not promoting understanding of the social world, rather we are propagating dogma, and this is dangerous as a wrong or an incomplete 'solution' to social problems, no matter how devoutly people believe it, will not overcome the difficulties that society poses us. If we propagate a dogma (whether that of Marxism or that of 'free enterprise')

we simply abandon the search for understanding and leave our society open to the ravages of forces we only dimly comprehend.

It seems to me that the teaching of explicit theory is only one way of educating in the interpersonal. In language teaching we are concerned with inculcating mastery of a socially defined mode of symbolisation, one that varies not only between cultures which use different languages, but also between sub-cultures using the same language. Understanding that language can vary and yet still function perfectly well in expression and communication is a way of seeing the people-constituted nature of social institutions. Reading poetry could bring this lesson home, contrasting the romantic poets with the modern poetry of people like McGough or Patten, with the American 'beat' poets like Ginsberg and Corso, with the poetry of black America (LeRoy Jones for instance) and the dialect poetry of West Indian poets (e.g. Linton Kwesi Johnson), or of Robert Burns. In all these cases we would get different uses of language, different grammatical constructions (not entirely, but certainly in part), different words. Pupils could be got to see the diversity of language not in terms of correct/incorrect English (surely Labov's work in 'The Logic of Nonstandard English' has discredited that view) but in terms of differences which give language a richness that total adherence to standard English would reduce to a comparatively dull uniformity. I'm not saying that all that is written in standard English is dull, just that much that is written in non-standard English should not be dismissed. Nor can we reasonably represent non-standard English literature as the product of people who have learned and transcended standard rules, counter examples abound - a blues song like, "St. James' Infirmary," seems to me to be a powerful poem even if its author(s) were semi-literate blacks who never learned to 'speak properly'. And, of course, the study, in translation, of a work like Wu Ch' Êng Ên's 'Monkey' or of Njal's Saga or Tristan could introduce pupils to very different world views, very

different cultural attitudes, values and beliefs.

Understanding cultural differences in speech patterns and social etiquette is a way of understanding the nature of social institutions better, simply by making us aware of the element of choice, our choice, in the determination of social rules. Drama lessons involving improvised rôle-play can add to people's understanding of social institutions by getting them to imaginatively put themselves in unfamiliar social settings, by getting them to reflect on why one might do 'this' in 'this' social context. Here also might be brought out the tensions between personal feelings and the demands made on individuals by their home society - the relations between the interpersonal and the personal. Reflections on such issues can easily become moral education insofar as this must involve more than getting people to behave correctly (where 'correct' is viewed normatively), insofar as discussion of a drama gets down to the level of reflecting on notions like 'right' and 'wrong' more sensitively, even more philosophically (and I don't think that reflecting philosophically necessarily means doing ethics formally, although I believe that school pupils are capable of grasping philosophical positions if these are put simply).

All these things are education in the interpersonal and all could be included in what schools teach - in fact many teachers do such work already. Careers education can play a part in teaching pupils about their home society as can more formal studies. History can show some of the reasons for particular social changes, though here again a balance would have to be struck between conflicting views. Finally political education must play a part here, even though the planning of a balanced syllabus in this area may often be frustrated by influential dogmatists of the right and of the left.

Education in the interpersonal also has a rôle in enriching our pupils' understanding of all disciplines insofar as disciplines are interpersonally constituted

traditions of enquiry and understanding a discipline must involve some grasp of this. It seems to me that history has an important part to play here, not just the history of great men or social history, but the history of ideas, of art, of science, of maths etc. A historical approach might play a part in the actual teaching of maths or physics, or co-ordination between the history department and other departments might be the answer. I don't want to offer a solution which should be adopted by all schools, the best solution for any particular school will depend, after all, on the expertise available within its teaching staff, and that will vary from school to school and department to department within schools.

All I want to say is that it seems odd to me that anyone could be regarded as having an adequate understanding of, say, maths who doesn't have some historical perspective on the problems which led to the generation of calculus, of trigonometry and other areas of the subject. This is something of a personal confession as I myself learned a great deal about, for instance, Cauchy sequences, and passed exams requiring me to use my knowledge of them, before I ever became aware of the historical importance of Cauchy as the man who ended two centuries of embittered debate over the validity of the notion of a limit in the context of calculus and hence over the coherence of calculus as both a branch of mathematics and as part of the methodology of physics.

It seems to me that the understanding of mathematics which I, and many other teachers, acquired in order to become recognised teachers of the subject was confined largely to learning its technicalities and, as a result, was a thin sort of understanding. This problem is one which institutions of higher education must take note of as much as schools.

Education in the interpersonal does not, it seems clear, demand massive changes to the subject-based

curriculum we now have, although it might involve a different selection of subject-matter in some areas (in poems/novels selected in literature classes for instance). It does, however, require that teachers regard education in the interpersonal as important and plan what they teach accordingly. Teachers must be sensitive to areas which they teach which carry social implications and we must bring out those implications clearly. We must not tell pupils 'how things are' in the social world in the sense of inculcating belief that one theoretical perspective is true and the rest false. That would be to mislead pupils by claiming a higher degree of certainty about the nature of society than we can reasonably justify claiming. The 'magnificent myth' of Plato's 'Republic' might seem an attractive ploy for achieving social stability, but the reassuring side of such paternalism is more than counter balanced by the 'big lies' of men like Adolf Hitler. Understanding society and social relationships must involve more than according with established rules, it must involve seeing those rules as arrived at through interpersonal agreement and hence binding only for so long as people acquiesce to them. The tacit acquiescence of a man who behaves properly through lack of opportunity or imagination or else through fear of sanctions does not result from a proper understanding. If we seek to propagate understanding of the interpersonal we must aim to get people who can see that things might be otherwise to acquiesce overtly to social rules because they see relevant reasons (reasons why 'this' is the right way to behave) for acquiescing. If it is replied that fear of as oppressive regime is good reason for acquiescence I simply re-state my remarks made when I discussed 'education and understanding', that it seems to me that whilst fear can mitigate our doing something we know to be wrong, it doesn't make us right.

I should say before moving on that I do not see my remarks here as subsersive except from the point of view of those who see society as divided between shepherds, whose job it is to make the rules, and sheep, whose rôle

is to do as they're told. Helping pupils understand the possibility of social change being brought about, by democratic decision, by economic depression, by popular uprising or in any other way, is not the same thing as making social education a way of building a potential revolutionary class. Awareness of the problems of society and of the possibility of change is a way of making people socially responsible. Someone who sees what the problems to be solved are will also see the necessity of making changes that will solve those problems whilst not generating even bigger ones. A more subtle grasp of the problems of society and of the potential danger of jumping from the frying pan into the fire is not, I think, likely to convince our pupils that, "We don't want to understand society, we just want to change it," is the right approach to building a better society. Rather, I suggest, the vast majority, on seeing the complexity of the issues involved and the dangers of 'going off half cocked', would surely have some sympathy with these words of Montaigne's, written about the Reformation in France:

> "In our present quarrel, where there are a hundred questions to remove and reinsert, great and profound questions, God knows how many people there are who can boast of having exactly understood the reasons and foundations of both sides. They are so few, if there are any, that they would not have much power to trouble anyone. But all the others, where are they going? Under what banner are they breaking away.
>
> Their case is like that of weak medicines poorly administered; the humours that they seek to purge are heated, exasperated and embittered by the conflict, and still remain in the body. Because of its weakness, the cure has not succeeded in healing us, and yet it has weakened us so that we cannot expel it either, and all that we have as a consequence is a long intestinal pain."
>
> ("On Custom and Why We Should Not Easily Change an Accepted Law," from Book 1 (1572-74) reprinted in "The Essential Montaigne" edited and translated by Serge Hughes.)

Increasing people's understanding of society, even if we haven't got much further than a partial understanding of the complexity of the problems involved, is, I suggest

a way of making people more socially responsible, more sensitive to difficulties and less open to dogma. This sort of understanding would make a unified society where there was a will for social justice more, rather than less, stable. It would only be subversive in contexts where stability depended on the oppressed failing to see their oppression as a yoke that might be removed. Such understanding in such a society would be subversive, but the society itself woukd have the potential for instability, for social strife, built into its basic structure.

The Personal.

Education in the domain of the personal must be concerned with getting pupils to understand themselves and others as subjects of experience with complex affective lives. In this area there is no adequate body of theory which reveals people's inner lives in a way that we can reasonably describe as accurate. Psycho-analytic theory has too many internal problems for us to accept that grasping such theory can be justifiably said to give us even a fairly good understanding of the workings of the human mind even though it may embody insights which will be of help to those engaged in trying to construct a more acceptable theory. But learning explicit theory isn't, as I argued in 'Knowledge and Understanding (ii)', the only way to acquire understanding. Theory is generated in engagement with problems, and ultimately, if the theory is to appear as more than a complex game, it must have implications which are relevant to problems which confront us in everyday life. Direct engagement with such problems can lead to the acquisition of understanding, even if that understanding is manifested in an improved ability to deal with relevant aspects of the world rather than as explicit theory. So, perhaps, in the absence of a body of explicit theory which we would feel justified in teaching, we should approach education in the personal by attempting to get our pupils to engage with the problems of the personal, the problems arising from the complexity of our inner lives, in the hope that an increased sensitivity to the problems will, even if we can offer no general answers, help our pupils to find their way in personal interaction more successfully.

Literature can be of help here as well as in the interpersonal. Besides showing us the diversity of language and giving us the writer's view on some aspect of social organisation literature shows us human relationships and imaginatively empathising with characters in novels, plays and films can, as I suggested when I discussed 'Understanding and the Emotions', be a way of

making us more sensitive to the feelings of others and hence a way of understanding them better. Engagement in artistic creativity, for reasons I gave in my general discussion of the personal. can also be a way of looking within ourselves and we can also find out more about ourselves and others from the way we, and they, respond to different works of art. The 'dual' nature of art, as both interpersonally constituted symbol and as intimately personal expression also makes the arts an area where tension between the personal and the interpersonal is a particular problem - the question must always arise of how far an artist can stray from convention before his work becomes unintelligible to his audience.

Drama, in particular, seems to be an ideal medium for education in the personal. I have already suggested that rôle-play is a good way for people to become more sensitive to social rôles that are not their own, and by extension any activities which involve pupils in pretending to be some other person, particularly if the acting-out is augmented by discussion of what motives 'this' person in 'this' context might have, or of how 'that' person might feel in those circumstances would encourage pupils to greater sensitivity towards others. The acting is a way of engaging the imagination, of 'getting under a character's skin' more completely than passive reflection can usually manage, it is a teaching method, but, it seems to me, a most appropriate one.

Acting out the drama is, in itself, inadequate, but this is hardly likely to surprise or upset drama teachers most of whom see the importance of discussing things like motivation and feeling of characters before, during and after acting starts and who would regard such issues as important in the assessment of the success of a performance. It is obvious also that plays can play a part in personal-education-through-drama and that here selection of material which pupils can relate to, in terms of having ideas about what is happening and, most importantly, why, is of central importance if the endeavour is to be

educationally successful.

The links between the personal and other areas can be brought out in many ways. I have already mentioned the centrality of the problem of how to balance art as personal expression against art as interpersonal symbol to the whole artistic endeavour. But there are also problems with the inanimate which artists must handle, problems about what can be done in a particular medium and how to do it must be faced when planning a work of art and here maths and physics, not to mention materials science (for sculptors experimenting with new materials) are relevant. And the arts also contribute to other areas, not just with aesthetic notions like that of an elegant mathematical proof, but with help in design - aesthetic considerations play a part in fields from architecture to motor-car design to the formats of books and newspapers.

It seems clear that engagement with the arts, in reading literature, looking at visual art, listening to music and in active participation in artistic creativity, can contribute to our understanding of the personal so long as teachers see this as an important part of their task - and many quite obviously do. But to make art education function in this way requires that art be represented to quite a degree as personal expression and not just in formalist terms. The teacher who regards art as predominantly defined in terms of publicly accepted form is unlikely to stress personal expression sufficiently to make a significant contribution to his pupils understanding of the personal. Equally, of course, teachers who stress expression without introducing pupils to various forms which artists have found appropriate for their expressive purposes will leave out much that is important, for art is not mere expression, it is, to some degree at least, symbolic expression, expression which can be read by others.

One other area which must involve an element of education in the personal is sex education. Teaching young men and

women about sex has got to consist in more than giving the facts about the physiology of the human productive organs or about contraception. Relationships between people aren't just sexual romps. they are also occasions when deep feelings can be elicited, in discussing relationships sex education must surely raise the question of whether, say, a man who sees himself as a 'superstud', taking sexual pleasure where he can with no consideration for his partner, is morally culpable insofar as his behaviour evinces a lack of respect for persons. Questions about how one should or should not treat other people, and why, and about what is proper or improper in a sexual liaison must surely be raised in sex education, and the issues involved are not only from the interpersonal, though these are important. In situations where relationships involve feelings and emotions we can only understand what's going on if we see the participants as having complex inner lives, by engaging with them on the level of the personal, by engaging with 'this' person not as a person of a certain (socially defined) kind, but as a unique individual with his or her own thoughts and feelings which we should be sensitive to and take into consideration in our actions towards them.

Again in this area of education it seems that the potential is there in terms of subjects taught and many teachers do try to educate in the personal. Improvement in this area seems to depend upon teachers seeing education in the personal as important and gearing their teaching methods and subject matter towards it, dealing with the issues explicitly instead of hoping that pupils will, through luck or divine providence, catch on to the idea which is implicit in some work being read or activity being pursued.

The Absolutist.

Earlier remarks on the status of absolutist assertions should have made it clear that we have, to date, no justification for teaching anyone that any statement, other than statements which are analytically true, is absolutely true. This observation has implications for the teaching of all subjects. We know that our knowledge in all four of the non-absolutist domains is far from certain. This is obvious in the case of the personal and interpersonal where no-one would deny that our understanding is very patchy when assessed by reference to the adequacy of theory in these areas, but it is also the case that our knowledge in the animate and the inanimate is far less complete than many people seem to believe. At the moment, for instance, physics is 'in limbo' to quite a degree largely bacause the basic model of matter used in particle physics is looking less and less like an adequate paradigm whilst alternative accounts in terms of energy fields don't look any more attractive in their present state of development. The important point is that we, as teachers, must introduce our pupils to the idea that our discoveries, in the sciences and the human 'sciences', are uncertain, that 'this' is not how things are, finally and irrevocably, but that it is something like how things are, a way of looking which ' functions reasonably well as a problem solver, so that we feel confident that it captures how things are in the world to a reasonable degree. The search for final and complete answers is a metaphysical endeavour, not one the empirical disciplines are involved in - we must get this across to our pupils.

Nevertheless, because absolutist claims play an important part in human life, it seems to me that some sort of understanding of absolutist claims, of the difficulties that we have with them, and of the difference between a claim like, "God exists," taken in conjunction with a whole body of not-to-be-questioned doctrine specifying the nature of God, and, "The atomic weight

of hydrogen is one," which gains its significance from its role in the language game of chemistry/physics and which might well lose its significance or have that significance altered, if physics abandons a particle-based paradigm. We have to teach our pupils the distinction between the claims, "This seems a good way of looking at the world," and "This is how things are sub speciae aeternitatis."

The one subject taught in some school systems (though not all) which typically requires us to come to grips with absolutist assertions is religious instruction/education. Insofar as our aim here must be to inculcate an understanding of religions, both as bodies of doctrine and forms of life, it has been argued that to do our job properly we must inculcate religious belief in pupils as this is the only way to really understand what religion is all about. It seems to me that it is wrong to write any sort of belief in, or emotional commitment to, what is understood into the concept of understanding. I have covered the arguments here at length; the person who argues that we can't understand religion unless we are believers, and hence that we should inculcate religious belief into our pupils is to be listened to to the same extent as a murderer who claims that those who have never murdered cannot understand him and hence that only a judge and jury who are themselves murderers are competent to pass judgement on him. I covered these arguments when I discussed, 'Understanding and the Emotions'. In any case, since we do not know whether or not many religious assertions are true, an attempt to get pupils to believe them could not involve any reference to their truth conditions and would thus appear as different to distinguish from indoctrination and hence as conflicting with the aim of propagating understanding.

Nevertheless the fact that we can't justify representing a statement like, "God exists," as true doesn't mean that we should represent it as false. This statement is problematic because not only do we have trouble deciding

what might count as evidence for the existence of a God conceived of in a certain way, we also have the problem of different notions of God, from the personalised God of Christianity to God as a divine essence which is an aspect of everything as found in some forms of Buddhism and Hinduism. Teaching that God exists, and that He is like 'this' or 'that', is unjustifiable whatever the dogmatists may say. Yet religion, of one sort or another, may embody truth (though we can't know for sure that it does), and is certainly important in life.

It seems to me that religious education has a place in schools as a way of getting pupils to have some understanding of an important aspect of human life, an aspect which has taken on very different forms of different cultures. I would suggest also that there is no justification for claiming of any religious assertion that 'this' is something people should believe, for such a 'should' could only be rationally justified by reference to the truth of the assertions and this cannot be done. We must teach about religion, if at all, without prejudice to the question of belief. We must let our pupils look within themselves to see if <u>they</u> have faith and we must teach them that to be human is to be uncertain, particularly over questions about the existence and nature of God. We must say, with Kierkegaard that God is an object of faith, not of knowledge, and we must reply to claims that God is 'like this' or 'like that' by telling the Sufi story of the blind men faced for the first time by an elephant - one felt a leg and concluded that an elephant was like a massive wrinkled pillar, another felt the trunk and concluded that an elephant was a sort of snake and still another, walking into the elephant's side, concludes that an elephant is like a solid wall. If we are to give religious education we must teach our pupils the difference between faith and certain knowledge and make them aware of the uncertainty of faith, of the fact that even when we believe something of this sort to be true we must maintain awareness of the fact that to err is human. Thus

teaching about absolutism is teaching the difficulty of claiming absolute certainty and that faith alone cannot guarantee truth.

The second-order disciplines.

Philosophy does not appear on the curriculum of English schools, though the French do include it. It is the case, however, that philosophical issues arise in school, over discipline, in discussion of literature and important epistemological issues arise in the context of the physical sciences. It seems to me that there is no reason to avoid philosophical problems entirely in teaching other disciplines if that is taken to imply that teachers should encourage reflection on philosophical issues relevant to what they are teaching or that in some situations (for instance in social studies) intractable philosophical problems, in ethics for instance, should be aired and pupils shown something of their complexity and the difficulty of solving them. I would not suggest, however, that the philosophy of science, say, should be a part of every school physics course simply because understanding the issues in the philosophy of science seems to require quite a grounding in the sciences (I can't imagine what someone with no understanding of physics could make of something like 'Against Method'). I argued earlier that philosophy is part of every domain, relates to every discipline and I see no reason, other than the ignorance of philosophy of teachers, why philosophical issues should not be raised in a simple form in the classroom.

The formal disciplines do appear in the curriculum. School mathematics often include elements of formal logic (truth-tables and syllogisms are taught in some courses). It should be clear from my earlier remarks on the formal disciplines that maths should be explicitly related to those disciplines for which it provides important methodological tools. Too often, in my own experience, maths syllabuses fail to reflect the requirements of other disciplines, physics teachers being the most frequent source of complaints to the maths department. This seems silly to me. It is true that a great many mathematicians (particularly pure

mathematicians) seem to be quite happy with the idea that maths is one big formal game, fascinating for some, but with at best tenuous links with other disciplines. But we can't expect all our pupils to become emotionally committed to maths-for-its-own-sake. And the justification of the claim that the general value of maths is such that everybody should have some understanding of it cannot rely on claims that it is intrinsically interesting- I argued this in my earlier discussion of intrinsic worthwhileness.

The general value of mathematics must derive from its links with other disciplines and their methodologies. If we are serious in trying to get our pupils to understand mathematics in a wider sense than just training them to answer certain sorts of mathematical questions correctly we must stress these links. The best way of doing this, it seems to me, is through co-ordination of what is taught in maths lessons with what is taught in other subjects.

It seems almost absurd that a maths syllabus should not be co-ordinated with the syllabuses of other subjects, particularly the sciences, but it is too often the case that it is not. In view of the fact that in most cases such co-ordination would require only a re-shuffling of 'what's taught when', together with relatively minor alterations to overall content, it seems to me that here a great opportunity to improve pupils' understanding of both mathematics and other subjects is being lost largely through lack of planning. The reasons for this often come down to lack of time in which to do the detailed planning needed in co-ordinating the teaching activities of different departments - here again we see a lack of manpower militating against curriculum planning at school level.

The Curriculum - summing up.

We have seen that in terms of subjects taught the sort of curriculum we have has the potential, at least, to give pupils in schools an introduction to the different modes of understanding which have grown up with the domains of the inanimate, animate, interpersonal, personal and absolutist. The important thing to note is that to achieve a proper grasp of the domains pupils must be given an understanding of both the differences between the problems different domains engage with and the relations between the findings of different areas. The existence of subjects which like geography, language studies, literature etc., engage with issues from different domains means that, in principle, we could show pupils that different areas do inter-relate even if we often fail to bring out such problems clearly. The crucial point to make is that improvement in education (seen as concerned primarily with the propagation of understanding) can only be achieved if teachers see what they are doing in terms of the domains and actively seek to inculcate understanding of the differences between the work done in different areas.

Also important is the realisation that understanding a discipline involves more than grasping a way of looking. Disciplines are historically evolving traditions of enquiry concerned with solving certain sorts of problems, and the language/concepts etc. used by any disciplines do not constitute a way of looking which reveals the world absolutely, they constitute (ideally) the most progressive (in terms of problem solving) way of looking at relevant problems, and hence relevant aspects of the world, the discipline has so far devised. As such the way of looking can be said to capture how things are to a reasonable degree, but not absolutely.

Understanding a way of looking must involve it being seen as more than a way of answering exam questions. Insofar as disciplines must deal with basic (as opposed

to internal) problems, problems which can be seen as problems beyond the boundaries of particular disciplines which seek to solve them, mastery of a way of looking must involve acquiring the ability to deal with any relevant problems, and this means that it must involve the way of looking giving someone who has mastered it an ability to pick out relevant detail and read it correctly, wherever in the world it is encountered. Such mastery is, of course, a matter of degree.

But mastery of a discipline's way of looking as a way of reading the world is only part of understanding it. Teachers must also attempt to inculcate awareness of the status of the ways of looking we seek to initiate pupils into. We must show how the relevant theories/paradigm came to be generated, what sorts of problems were crucial in the development of the way of looking and why the discovery of solutions to those problems is an important endeavour. So when we are trying to inculcate understanding of a discipline we should be concerned to inculcate three (related) things:-

(1) A grasp of the discipline's way(s) of looking which will enable each pupil to pick out relevant aspects of the world and attach the appropriate significance to them,

(2) A view of the way(s) of looking as being the product of a tradition of enquiry (the discipline) concerned with certain sorts of problems rather than others,

and (3) Awareness that disciplines relate to basic problems which are not just esoteric matters, but which are problems which confront us in the world, i.e. an awareness of why the generation and mastering of specialist ways of looking should be regarded as an important matter and not as just a complex game in which winning means getting qualifications and better jobs.

All these are a part of the understanding we should,

as teachers, be trying to propagate. By being sensitive to these requirements individual teachers might well come to reconceive what their job involves and hence pay more attention to requirements (2) and (3) which, it seems to me, tend to be neglected, particularly in the education of those pupils who are regarded as more academically able. I hope my arguments have established that there are good reasons why this should not be the case.

One query that might be raised concerns standards. Including the giving of a historical perspective on, say, physics as part of a physics teacher's job, and hence relating theory to the basic problems it was generated in engagement with, would result in more subject matter being included on the syllabus if none of the theory currently taught was dropped. Since there is only a limited amount of time available for teaching any subject (and only about 25hrs a week, 40 weeks a year for 11 years for the whole of a pupil's compulsory education in Britain) it might be thought that my suggestions, if implemented, would lead to less theory being covered (in the hard-theory based 'academic' subjects) and hence to a fall in educational standards.

My contention is that although less hard theory might be taught in an education designed to propagate the broader understanding of systematic enquiry I have argued for, this should in no way be regarded as symptomatic of falling standards. The purpose of physics teaching in school cannot be the turning out of physicists, it must be that of giving pupils a grounding in physics (or any other discipline/area) which will increase their understanding of both what physics is about and of those aspects of the world with which physics deals. Further this grounding must be an adequate preparation for further study of the discipline if that is what the individual student chooses. The idea of a basic schooling which is a cul-de-sac, which doesn't link with higher education would be absurd in the context of education concerned with propagating understanding for the acquisation of

understanding simply isn't something that we can come to the end of.

I believe, for reasons which should be obvious from earlier discussion, that teaching theory alone is an inadequate grounding in any discipline. I contend that a broader understanding of a discipline as a communal tradition of enquiry into important problems will put theory into its proper perspective, will make theory more 'alive'. Thus, although my suggestions might lead to less theory being taught, what is taught will be better understood, its significance more thoroughly grasped. The approach I am recommending is, I believe, likely to increase pupils' understanding in ways that will increase retention. It will reduce the incidence of pupils coming to see theory as elaborate and generally irrelevant ritual gesturing and this should increase retention (it is a psychological fact so well known as to be almost forgotten that we remember what is significant to us far better than what is not). I further believe that giving pupils a broader perspective on theory and its links with the probelms of life would be to establish a framework into which new theory would 'slot' in a way that would make acquiring specialist concepts etc. easier. My suggestion is simply that if we see the problems which theory is directed to solving we are better able to see the point of the new theory and the specialist concepts and techniques we need to master will be seen as appropriate for tackling important problems not as empty ritual and meaningless mouthings. So, I suggest, adopting my approach, whilst it may lead to less theory being covered, will lead to a better understanding of that which is covered, better in the sense of showing pupils the point of a theory in a way that seems likely to increase their interest and motivation and in the sense of giving them an overview of particular traditions of enquiry which will constitute a better basis for the acquisition of new ideas, for getting further into a discipline if that is what they choose to do.

The notion of a co-ordinated curriculum is closely related to the idea that we should attempt to inculcate a broader and deeper understanding of the disciplines we attempt to give pupils a grounding in. A co-ordinated curriculum is one in which each subject teacher is aware of the relations of what he teaches with other subjects and regards the bringing out of such relations as an important part of his job. This I regard as yet another way in which the pupils general perspective on specialist theory, and technique/procedure can be expanded in a way that will give him a better understanding of the theory and of the disciplines themselves.

I have not said anything here which might demand that every school should organise its curriculum in one particular way. What I have said implies that an acceptable curriculum must be balanced across the domains and must be designed so as to inculcate (or be appropriate for inculcating) an understanding of the subjects taught of the sort I have described. Changes in curriculum design, I suggest, should be made in the light of the considerations I have raised here and in earlier discussion. But I don't think that curriculum innovation made under these considerations would automatically zero-in on one format. I believe that inter-subject co-ordination is an important idea, but even here different approaches might prove appropriate for different schools in different areas.

The important point about curriculum is that it should be designed to inculcate as rich an understanding as possible of the different approaches to the world which have grown up with the domains. How best to do this in particular schools will depend upon the expertise available amongst the staff, on the sort of area the school is in and on the cultural origins and abilities of the pupils. Considerations like the cultural origins of pupils and the sort of area the school is in will determine what opportunities the school has for things like projects. An inner-London school will have opportunities for multi-cultural education which a

school in a rural community is unlikely to have. A country school will have opportunities for work in the life sciences (botany, ecology, land use, patterns of agriculture) which a city school won't have, 'though the city school will have other opportunities (when doing 'A' level chemistry I was able to visit a plant manufacturing sulphuric acid by the lead chamber process simply because there was one 7 or 8 miles down the road).

I have not, then, designed the 'ideal curriculum' because I don't think that such an animal exists. Rather I would claim to have given general guide lines which should be observed as far as possible when designing/modifying a curriculum for particular schools in particular places with particular resources, in terms of equipment available, expertise of available staff and opportunities available in that particular locality. Since schools differ in all of these respects the best possible curriculum, in a sense of possible which takes practicalities into account, is likely to vary from school to school. My guidelines, I suggest, also suggest ways in which schools might improve their curricula in terms of using existing resources more efficiently and in terms of what they might do if more resources were available. I have tried to point the way to better curricula, better education, this I take to be a worthwhile endeavour even if economic difficulties make the hope of maintaining standards look like euphoric optimism and hope of improvement seems, for the time being, pie in the sky.

On Teaching.

My intention here is not to say what all teachers should do. I want to make some remarks on the teaching situation which will, I hope, be helpful to teachers. By 'teaching situation' I mean any set-up in which one person (the teacher) seeks to get someone else (the pupil) to learn something. I might be accused of having a thin notion of teaching here as my concentration on the person to person(s) teaching situation misses out reference to the many technological aids to teaching, from programmed learning texts through the various sorts of teaching machine to more sophisticated ideas like fully interactive teaching-programmes for computers where the computer can be made to display encouraging remarks or friendly advice to the pupil who 'communicates' with it through a tele-type terminal. I don't think that this objection constitutes a serious problem for me. I can communicate (or seek to communicate) with someone indirectly by leaving them a note or sending them a letter and I, or someone else, can attempt to teach somebody by giving them work-cards or writing a programme for a computer or in any number of different ways. Any such aids to teaching don't alter the fact that the paradigm teaching situation is the person/person(s) one. Technological devices may replace direct personal contact between teacher and pupil(s) but it is the teacher who intends that the pupil(s) should learn 'this' or 'that' and sets up the devices accordingly. Any communication which we might be tempted to describe as occurring between the device and the pupil is, in fact, communication between teacher and pupil, the device, be it book or computer or whatever, directs the pupils in ways intended by the teacher, author or programmer. Thus I don't feel that anything vital will be missed out if my discussion on teaching focuses on the context of direct person to person(s) contact.

Two other features of what I've said about teaching might disquiet some. The first is that I've stopped at making a conceptual link between teaching and learning

and haven't required that what is learned is true. I hope it is clear from earlier discussion that I think that education should be concerned with propagating understanding and hence that teachers in educational institutions should be concerned with getting pupils to learn what is true where this is possible. I am, however, wary of trying to write too much into the concept of teaching itself so I have settled for the teaching/learning link and have gone no further in the direction of conceptual analysis. This may leave me with too wide a notion of teaching, but this is unimportant here as I have already dealt with the question of what should be taught and so can safely get on with a discussion of the problems involved in getting pupils to learn it.

The second problem area lies in the debate about whether teaching is a task or an achievment. I have adopted a 'task' interpretation as I am interested in the attempt to get a pupil to learn and in the problems surrounding such an attempt. It may be that teaching implies success, so 'T taught X to P' is true iff 'P learned X from T'. In this case I should be talking about 'attempted teaching' here as I don't want to assume that the situations I'm discussing are always successful learning situations for the pupil. I want to look at the problems that can arise in the course of, and in some cases frustrate, intentional attempts to get someone to learn and I will call such attempts 'teaching' accepting that I should, perhaps, be calling them 'attempted teaching'. I choose the shorter form for reasons of economy, leaving open questions about whether 'to teach' is a task or an achievement verb, questions which are irrelevant (except in terms of terminology) to my interests here.

It is also the case that not all of the actions performed by the teacher which are directed towards improving pupils' acquisition of understanding are communicative acts. Setting up class libraries, putting posters on the wall, organising chess clubs or debating societies or school orchestras/bands are all activities which

teachers can engage in with the intent that an atmosphere conducive to study should be generated. These are not communicative acts in a straightforward sense as the teacher has no specific communicative intent with respect to any particular pupil(s), but they are 'teaching acts' insofar as it is hoped that the atmosphere generated in the school by the pursuit of extra-mural activities will help such things as teacher/pupil relationships and pupil motivation and will encourage pupils to get down to work better (amongst other things).

It is as well to remember too that it is not only teaching acts from which pupils learn. Pupils learn a great deal from teachers which teachers do not intend to be learned. In driving a wedge between communicative acts and teaching acts (i.e. acts performed with the intent to generally encourage pupils to learn - some communicative acts are also teaching acts) and then pointing out that pupils learn from/about teachers whether or not teachers intend this I am observing that teachers are constantly 'on duty' whilst in school. In other words the teacher's example in many things, from saying, "Hello," to pupils he knows as he walks through the playground at break to his willingness to give extra help to any pupil who is having difficulties with some topic has an effect on the pupils' attitude both to that teacher and to school. As this is the case it is clear that teachers must widen their own notion of what teaching is and pay attention to the effects on pupils of their own (i.e. the teachers') activities in school but outside the classroom. The 'hidden curriculum', what pupils pick up from their teachers, often without the teachers intending or even realising what's happening, must be brought out into the open, teachers must pay attention to it and work towards using it constructively for educational purposes.

One aspect of this need for teachers to be aware of and to direct their actions towards educational goals arises in consideration of the teacher/pupil relationship.

The important issue here is that of how the teacher should 'see' his pupils, the question of what way of looking at pupils is appropriate for a teacher whose purpose in engaging with pupils is (supposed to be) educational, who seeks (ideally) to increase his pupils' understanding of important aspects of the world.

Much earlier I rejected the notion that behaviourism was an adequate account of learning in that a purely stimulus/response theory which makes no reference to any 'inner' component is untenable for reasons of incoherence. I then argued at length that augmenting a s/r theory with a physicalist account of mind, in terms of brain states, cannot give an adequate account of at least human learning insofar as a purely mechanistic account, using an extensional description of brain states to 'explain' mental events, cannot, in principle, deal with the fact that in perceptual consciousness, for instance, we have access to a world independant of us, a world in which we are aware and upon which we act, not merely a world which impinges on us and elicits responses because of our nature as a mechanism different from a clock only in degree rather than kind.

The whole early part of this thesis was concerned centrally with the question of how to talk about human conceptual abilities and I concluded that we must regard people as conscious agents capable of picking out and attaching relevant significance to various aspects of the world and of recognising various objects of experience as objects for certain appropriate forms of behaviour. When I got to discussion of the general problem domains I added to this that not only are people members of their home cultures, they are also individuals with complex affective lives which are not entirely the product of socialisation. So people are at least conscious agents with complex inner lives who are also initiates of a home culture in terms of language, values, attitudes and beliefs. They are <u>not</u> reacting mechanisms to be operantly conditioned into correct patterns of behaviour where 'correct' is

defined purely in terms of social acceptability/ desirability within the specific context. Thus a behaviour-modification view of the teaching situation is inappropriate for teachers as such an approach at best ignores important features of the pupil as a person and at worst just doesn't make any sense.

Many people have argued that behaviourist theories of teaching aren't really pernicious as no matter how objectionable the theory, the practise it leads to amounts to good education in that the behaviour modificationist classroom just appears to be a very loving/caring learning environment. Whilst I am sure that teachers would be unlikely to be subverted by behaviourism to the extent of seeing themselves as technicians working out reinforcement schedules and planning sequences of tasks which pupils must be conditioned ro perform in appropriate circumstances, I am still wary of any move towards behaviourism. The over-emphasis on overtly observable performance in behaviouristic theories cannot accomodate the idea that understanding maths, say, consists in more than the ability to sit down and solve maths problems or the ability to formalise relevant everyday problems into mathematical form and hence solve them.

The idea that people need not only to know/understand theory at the level of being able to read the world from the perspective of the relevant way(s) of looking, but also need to understand the way of looking as the product of an evolving tradition of enquiry concerned with certain sorts of important (beyond the discipline's boundaries) problems has no place in a behaviouristic approach.

To a behaviourist understanding <u>is</u> the ability to act in appropriate ways. To me understanding, seen as the possession of a conceptual framework which enables us to see how things are (to some extent), explains our ability to act and understanding is much richer than the ability to perform appropriate actions in appropriate contexts.

It also involves seeing why the actions are appropriate and, hence, leaves open the possibility that someone might, by reflecting on the problems at hand, come up with a mode of action which, whilst not the normal course, is more appropriate in the context than what people would normally judge to be appropriate. My real objection is that stories about acquiring behaviour through positive reinforcement and reinforcing negatively to take some behavioural disposition to extinction is just hopelessly crude. In particular it takes no account of the rôle of mind in reflecting upon possible means to desired ends and generating strategies to enable us to evaluate the appropriateness of different possible means. Behaviourism just doesn't capture the way the human mind can make sense of the world, can reflect before acting. Understanding brings with it, in many areas, the potential for efficient purposeful action, but it is not to be confused with such action - this is the behaviourists' mistake.

In teaching we are engaging with conscious agents with complex inner lives who come to school with beliefs, attitudes and linguistic habits acquired in their home cultures which may or may not be those which schools seek to inculcate through getting pupils to understand their appropriateness. This should be the view of his pupils held by any teacher insofar as this is an accurate (if not too specific) account of the people who are his pupils and a failure to be sensitive to the implications of these facts is likely to lead to unsuccessful (attempts at) teaching.

It is important that teachers should maintain awareness of their pupils inner lives, particularly the affective aspects. Pupils learn much from and about teachers that teachers don't specifically intend to be learned. Pupils respond affectively to teachers' attitudes to them, they make appraisals, affective and cognitive, of the teacher as a person and also make similar appraisals of particular subjects, appraisals based on both the way the teacher

presents the subject (whether pupils find that he makes it interesting or boring, lucid or incomprehensible) and on the pupils' appraisal of the teacher (many people don't do well in 'this' or 'that' subject at school because they don't like/get on with the teacher). Pupils are people who evaluate teachers not as 'teaching technicians' but as people and a teacher who fails to grasp this is courting disaster.

The attitude to pupils, to school and to his subject that a teacher's actions exhibit are all important in determining the success or otherwise of his teaching in that pupils respond affectively to what they see as his attitude to them and to school and learning. A teacher who just goes to work to earn money, who takes no interest in his pupils as people, shows no great interest in his subject and seems unconcerned about whether or not pupils learn what is taught is likely to alienate pupils from himself and school (to lessening degrees) and is unlikely to inculcate in his pupils any feeling that schooling is important. Such a person is unlikely to teach successfully, Pupils' education will suffer and so will the teacher whose pupils will probably take to 'playing him up'.

It is not only the pupils' affective appraisals of teachers, subjects and school in general that have a bearing on the success of teaching. Different pupils also have different temperaments and the wrong approach to a pupil can do a lot of damage. Some pupils are both competent and confident but are lazy and need not only persuasion but threats of dire consequences before they get down to work. In such cases it is sometimes appropriate for the teacher to adopt the stance of an ogre, 'though the pupil is likely to be alienated if the teacher adopts the 'heavy' approach even when the pupil isn't wasting time or causing unnecessary disruption. Other pupils, on the other hand, are competent but lack confidence. The appropriate response to a pupil who fails to get on with work through lack of self-confidence, but who does what he's supposed to do perfectly well when watched and encouraged by the teacher is not the 'hell-fire sermon'

appropriate in my first example. To respond in such a way to a pupil who lacks confidence in his abilities is hardly likely to improve matters, such pupils need encouragement and praise and a gentle but firm insistance that they should try on their own first and then show what they have done to the teacher - in this way the pupil's need for reassurance can, over a time, be reduced to less demanding levels.

For a teacher the appropriate response to a situation involving a particular pupil depends in part on who the pupil is, on the sort of person he is. There is no alternative to knowing pupils intimately as people who, in many respects, are unique. Teachers and pupils are people and there is a personal aspect to many of the problems which arise in engagement between teacher and pupil(s). A teacher who fails to see his pupils as having affective lives which colour interpersonal interaction will simply fail to see where there is potential for trouble and, through ignorance and/or insensitivity, will generate massive problems which will make the teaching situation more stressful for him and will decrease the success (in terms of propagating understanding) of his teaching.

Of course it's not just in the pragmatics of successful teaching (or avoiding disaster) that we find the importance of acknowledging the uniquely personal aspects of people. If education is to be general it must seek to inculcate an understanding of the problems/possible solutions found in the domain of the personal, it must help people to come to grips with their own inner lives and to engage with others as persons with complex inner lives, not just with people as social units. Such education, if my earlier arguments have any force, should go on in schools and it is difficult to imagine how we could possibly increase our pupils' understanding of the personal without engaging with them as persons. This is particularly the case since, as I remarked in my discussion of the curriculum, education in the personal seems (for now at least) best approached

not through explicit theory (since we have no satisfactory body of theory for the purpose) but rather through direct discussion of the problems involved, and through imaginative empathy with characters in literature, films and in drama.

It would be wrong to think that education in the personal can be located entirely in or between specific subjects. Personal conflict, between pupils and between teacher and pupil is a regular problem in teaching. There's always someone who, 'got out of bed on the wrong side this morning,' (and it can be the teacher), there are always jealousies and resentments which lead to problems (I once had to leave a class working whilst I went to talk six girls from my form into going to their next lesson - the problem was something about Man Yu, who was supposed to be Rosaline's friend, sitting next to Catherine, not a friend of Rosaline's, Rosaline was upset and affronted by this 'treachery' and felt unable to go to her class, the other five had 'come out' in support out of concern and moral indignation). The teacher's job in such situations isn't just a matter of 'greasing the wheels' of the educational cart so things run smoothly, it can also be educational. Telling someone who's let down a friend or pulled a dirty trick which has upset a fellow pupil not to do it again isn't enough. Telling such a pupil that the person he's slighted has feelings and asking how he'd feel if someone did 'that' to him is part of his education in the personal. By trying to get this pupil to see others as having feeling which he should consider in his dealings with them we are attempting to inculcate understanding of and respect for the principle of respect for persons. Thus engagement with pupils as people is a pre-requisite of getting pupils to understand their inner lives better, a failure to regard pupils as persons would lead to the neglect of education in the personal. Further, a failure to engage with pupils at the level of the personal would lead to a failure to introduce them properly to the principle of respect for persons and this would constitute an ommission of an important aspect of their education in the

interpersonal.

The principle of respect for persons is a moral principle governing interpersonal interaction but it gains its force not just from the facts about people seen as social units but predominantly from the facts about people as subjects of experience who appraise their experiences both cognitively and affectively. In many aspects of every teacher's job, then, aspects of education in the personal must be dealt with as well as education in the interpersonal and the relations and tensions which arise between the two domains. We cannot hope to handle the problems which arise, or to help our pupils to handle them, unless we regard the teacher/pupil relation as being one between persons. This is what it is. To ignore the fact is to risk failure in teaching and to neglect an important aspect of our pupils' education.

Another important issue in teaching is that of language. The first thing to note here is that in trying to teach specific things to pupils teachers are involved in attempted symbolic communication, communication which can break down not through the pupils' intellectual incapacity to grasp ideas but through their incapacity to decode the teacher's utterances (linguistic and otherwise). In my own career as a maths teacher I discovered this to be a source of difficulty. Consider these problems:

(i) You go to the shop with a 50p piece and buy four apples. You give the shop keeper your 50p and get 18p change. How much did you pay for each apple?

(ii) Solve the simple equation: $4a + 18 = 50$.

To my surprise I discovered that a majority of first formers I taught could answer question (i) in the course of a mental arithmetic test whilst question(ii), which is essentially the same problem, remained difficult for some second and third year pupils (who could solve (i)) even after much effort had been made into giving an introduction to simple equations. The only difference between (i) and (ii) is in the mode of symbolisation: (i) is stated in

language the pupils use themselves in everyday life and which relates the underlying problem to activities with which they are familiar, (ii) is stated in the specialist language of maths. This suggests that the problem many pupils have with (ii) is not one with actually solving the problem, it is a prior problem of understanding what the problem is. The real problem is analogous with that of someone asked a question they know the answer to in an unfamiliar language. Failure to give the answer is the result not of a lack of knowledge of it, but of a failure to understand what is being asked. Similarly, it seems to me, the fact that far more of my pupils could answer (i) correctly then could answer (ii) suggests that their underlying problem was more a problem with understanding what (ii) was asking them to do than a matter of lack of a grasp of basic mathematical concepts. The problem is one of communication, the pupils failing to decode a question correctly.

This is an important point. Specialist subjects often use specialist language and, as I argued in an earlier section, initiation into a specialist language game is a way of increasing people's understanding. But this initiation into a specialist mode of language can also cause problems, especially when use of jargon prevents pupils realising that 'this' specialist term denotes something that they've known about/been able to do for years. Language teaching is an important part of teaching about any discipline. Introduction of specialist terms, specialist modes of symbolisation (algebra, chemical formulae, musical notation) is an important part of teaching any discipline and must be approached as language teaching, new ideas/forms being explained carefully in ordinary language (as far as possible).

Also important are familiarisation exercises where the whole point is to get pupils used to the new way of saying things. The most successful strategy I worked out for teaching simple equations involved translating English into Maths, getting pupils to translate a

problem they could do in their heads into the form of an equation e.g. writing things on the blackboard like, "I gave him £1 to get me two ham sandwiches and he came back with 30p change," which the pupils would translate to 2h + 30 = 100.

An equally important part of the move into specialist modes of expression is showing pupils the point of moving into the specialist mode. Pupils who could solve the above question 'in their heads' often questioned the point of the algebraic form. My reply to their questions was to give them questions they couldn't do in their heads and to show them how they could put the question into the form of an equation which they could then solve. Thus I managed to inculcate an understanding of algebraic equations as a more powerful problem-solving technique - one which keeps us going long after our ability to do mental arithmetic has let us down.

The central point I want to draw attention to here is one which many teachers of language try to draw the attention of their colleagues in other areas to: all teaching is language teaching and all teachers must pay careful attention in teaching to the problems involved in attempts to introduce pupils to new modes of expression, both linguistic and otherwise. In terms of my earlier remarks on meaning I would say that just as acquiring language in the first place is a matter of grasping the speech act appropriateness of different sorts of utterances in different contexts, so the learning of different modes of symbolic expression used in different disciplines must be seen as being essentially to do with grasping the appropriateness for certain specialist purposes of the specialist modes of symbolisation (linguistic and otherwise) used by different disciplines. And teachers must take care to initiate pupils into specialist modes of expression properly, to relate specialist expressions to ordinary language expressions and to show the special appropriateness of the specialist modes for handling the problems the disciplines are interested in. We must show

our pupils that the specialist modes of expression are not esoteric games but function, in the relevant domains, as far more powerful problem solvers than the ordinary language modes to which they are related.

This aspect of language teaching, initiation into specialist ways of symbolically encoding, communicating and manipulating information, is only a part of the problem of language in schools. Two other aspects of this problem arise from the conventionality, and hance cultural variability, of cognitive force and from the variations in syntactic rules which occur between different dialects of the same language. I will discuss each of these separately.

I argued, when discussing cognitive force, that the conventions governing it are separate, to some extent, from those governing informative significance. Support for this contention comes from work done on the use of English by both Asian and West Indian immigrants to England. One of the barriers to communication between immigrants and the native English, it appears, is the tendency for even immigrants who, grammatically, speak close-to-standard English, to use the language in accordance with non-standard rules of cognitive force. John Gumperz, interviewed in the booklet, 'Crosstalk' (National Centre for Industrial Language Training), mentions some specific problems - I will give two quotes:

> "The 'thankyou's', and the 'please's', that we constantly use, are not as frequent in Asian Languages. These forms are used for different purposes. They indicate pleading rather than politeness, and they are not used in talking with people of equal status. So Asians tend to use English politeness formulœ in ways that to us seem either too much or not enough." (P.44)

and on West Indian English:

> "...I think the most important differences are at the level of tone of voice, at the level of stress, and the level of use of loudness. Afro-

> Caribbeans tend to use loudness to indicate emphasis, while we tend to associate loudness with exitement. Or they tend to use loudness to indicate they want to stress a point of information, we tend to associate loudness with emotion. So we tend to mis-read each other and to think that somebody's being exited when he's making an important point." (P. 44)

In the case of the Asian use of 'please' and 'thank-you' we have an example of mastery of English in terms of vocabulary and syntax, but not in terms of cognitive force. An Asian using near-standard English, grammatically speaking, and being (from his point of view) perfectly polite,can be misunderstood by an English person who reads the Asian's utterance as if he is according with normal English conventions of cognitive force, which he is not. The Crosstalk booklet gives the transcript of a conversation between an English bank cashier and an Asian customer in which through misreading the Asian's tone of voice and failure to use 'please' and 'thank-you', the cashier responds to the customer as if responding to unreasonable hostility and impoliteness, These problems arise because participants in communication often tend to assume accordance with a specific set of rules of cognitive force and this assumption is often dangerous in cases of cross-cultural communication.

What seems crucial here is that teachers of children from other cultures must be sensitive to the possibility that what a pupil intends in making an utterance may be very different from what the teacher would have intended had he chosen that utterance as appropriate for his purpose. Teachers must be careful to address their pupils' intentions, not the standard speech act appropriateness of their utterances, this requires that teachers' appraisals of their pupils' utterances should be made carefully and in the light of knowledge of the possibilities of misinterpreting the cognitive force of utterances made in unfamiliar languages.

Another important point arising from the Asian English example is that whilst there may be good reason to teach

Asian pupils the standard English uses of 'please' and 'thank-you', for instance in order to help them handle life in England more efficiently, this shouldn't be thought of as 'teaching them to be polite'. These pupils, in general, are likely to be very polite people, their only problem is that their way of being polite is not ours. The teacher's job with such pupils isn't one of teaching them to be polite, it is teaching them what counts as politeness in England. What Asian pupils need to know is that in England the everyday 'pleases' and 'thank-yous' that scatter conversation are ways of acknowledging one's partner in conversation as an equal and are not seen as indicative of pleading and that a failure to use these bits of étiquette is seen as an assumption of superiority (i.e. one does not say 'please' when giving orders to an underling) or else deliberate rudeness. Such things should be taught as cultural differences, things it is useful for anyone from another culture to know if they are living in England. According with the rules of cognitive force which govern standard English usage is not a matter of being right or wrong in any absolute sense, rather it is a good idea if one has to communicate with the English, it is part of learning to communicate more felicitously with standard English speakers.

The example of the West Indian use of loudness for stress is also an example of a possible misinterpretation of cognitive force, but in a different way. The Asian example is one in which the utterer performs a conventionally defined speech act and his audience interprets it as such but, through ignorance of the conventions of force with which the utterer is according, misinterprets the cognitive force, infers that the utterer is intentionally doing something which, in fact, he is not doing. With the West Indian use of loudness for emphasis another possibility arises - that what is a perfectly controlled speech act is not seen as a speech act at all, but as an uncontrolled expression of anger or excitement. I said when I began discussing signs

that one 'thing' can be an instance of more than one sign. Thus a linguistic utterance can be decoded as a symbol, i.e. its informative significance and cognitive force can be read by someone who understands the form of life, grasps the relevant conventions. But a linguistic utterance can also be read as an index, as symptomatic of an affective state, even if it is not an explicit performative. In standard English loudness is not part of the conventionally defined 'machinery' for emphasis, thus we tend to read a raised voice indexically, as an uncontrolled expression of excitement. West Indian English, on the other hand, uses loudness as an appropriate (within that form of life) way of (e.g.) stressing an important point. It is fairly obvious that telling a West Indian who is in complete self-control not to get excited could lead to his getting upset, after all he knows he isn't getting excited and so could only interpret such interruptions as spoiling tactics. Again, here, we have problems arising from cultural differences in force and again the need to accord with more standard English conventions is a matter of facilitating felicitous communication. Communication between a teacher and his pupils is essential for teaching to be successful. The teacher, having received an education already, should be a more sophisticated user of language. Thus it is the teacher who we should expect to be more sensitive to the possibility of communication failing through different conventions of cognitive force being accorded with than his pupils. Indeed we can see that teaching about language, about how one might go about performing different sorts of speech-acts in different cultural contexts, could be said to be an important aspect of language teaching, and language teaching, as I remarked earlier, is not something that can be safely left to English lessons.

The problems which arise from the cultural variability of conventions of cognitive force are important, but the problems which arise from syntactic variation between different forms of the same language can lead to even

more serious failures in communication. Reading the informative significance of the utterances of some native speakers of English from the point of view of a standard English speaker can result in a complete failure to grasp what is said. Consider the following:

> "o i ain't no deacon baby,
> i ain't never been a praying man,
> o i ain't no deacon baby,
> i ain't never been a praying man,
> but i had to call on someone,
> you the only one was close to hand."
> verse iv of A.B. Spellman's 'The Joel Blues (after and for him).'

This poem is written in Black English Vernacular (B.E.V.) a non-standard form of English which systematically 'violates' standard English rules. If we take the first line, "o i ain't no deacon baby," we find that terrible 'faux pas' (in standard English), the double negative, which, interpreted by standard rules, leads us to interpret Spellman as saying that he is, indeed, a deacon. If we ploughed on blindly in this vein we would end up 'correcting' the above verse to something like:

> "O I am not a deacon baby,
> I have never been one who prays,
> O I am not a deacon baby,
> I have never been one who prays.
> But I had to call on someone,
> (and) you were the only one close to hand.

This, we would conclude, was what Spellman wanted to say, and we could go on to suggest that Spellman's 'failure' to express himself 'correctly' might be a result of linguistic deprivation, from his being a native speaker of B.E.V., a mode of English which is conceptually confused, unsuited to the precise expression of information. We would, in following this line, have missed the power of the poem, but this sort of reasoning is fundamental to much educational thought on language, for instance Bernstein's work on elaborate and restricted codes and the work of Bereiter et al which led to 'Operation Head-start' in the United States.

The most important philosophical objection to such a line of reasoning has been raised twice in this thesis. In my discussion of the private language argument I drew out and agreed with Wittgenstein's point that grammatical similarities between sensation language and physical object language should not blind us to the differences between sensation concepts and physical object concepts. In the section 'Concepts and Language' I mentioned Cooper's argument to the effect that grammatical differences don't automatically mean conceptual differences, that conceptual differences can only be shown by showing that different words belong to different groups/ language games in different languages (as with the Hopi words for time and space) - I also discussed this issue in my account of understanding. I have, then, already established that grammatical similarities don't entail conceptual similarities and that grammatical differences don't entail conceptual differences. Thus there is no justification for asserting that just because a non-standard English dialect like B.E.V. violates the syntactic rules of standard English people who speak it are conceptually disadvantaged.

To demonstrate that to be a native B.E.V. speaker is to be conceptually disadvantaged as compared to being a native speaker of some more standard English dialect (e.g. Oxbridge English), we would have to demonstrate that the syntactic form of Oxbridge English allowed, as a matter of logic, the formulation of more subtle, more abstract propositions than that of B.E.V., only then would we have any justification for suggesting that the grammatical style of one's native dialect of English could, by itself, be a limiting factor on one's conceptual development.

This is not an area of the philosophy of language I have dealt with in this thesis, but the issue is important enough and the evidence from linguists decisive enough that I feel justified in taking a little space to demonstrate the untenability of the 'linguistic

deprivation' thesis. I will draw on William Labov's paper, 'The Logic of Non-Standard English', reprinted in his book, 'Language in the Inner City: Studies in the Black English Vernacular." On P.239 he writes:

> "The notion that large numbers of children have no capacity for conceptual thinking would inevitably mean that they speak a primitive language, for even the simplest linguistic rules we discussed above would involve conceptual operations more complex than those used in the experiments Jensen cites."

Labov's argument is with work which put black pupils into unfamiliar test situations and base their findings on what little response those children made to the testers. His own work demonstrates the difficulties involved in getting any coherent response out of black children in South-Central Harlem. With perseverance such children can be got to speak, and the analysis of their utterances reveals that B.E.V., has all the potential, in terms of possibilities of syntactic structure, for performing speech acts that standard English has. On P.238 Labov writes:

> "When linguists say that B.E.V, is a system, we mean that it differs from other dialects in regular and rule governed ways, so that it has equivalent ways of expressing the same logical content. When we say that it is a separate subsystem, we mean that there are compensating sets of rules which combine in different ways to preserve the distinctions found in other dialects."

On the specific issue of the double negative, or negative concord as Labov calls it, he simply observes that if use of this form of negative is symptomatic of conceptual confusion, then B.E.V., speakers are in the same state of cognitive inadequacy as native speakers of (the standard forms of) Russian, French, Spanish and Hungarian amongst others. The rest of Labov's analysis of B.E.V., suggests, as does the above quote, that it is one amongst many dialects of English and has the potential to express precisely (i.e. in a form which would not appear either

vague or ambiguous to a sufficiently sophisticated B.E.V. speaker) anything expressable in any other dialect. The inescapable conclusion is that there is little to say for the notion of linguistic deprivation.

There is, however, good reason for teaching a more standard form of English (syntactically speaking) just as there is good reason for teaching people who accord with non-standard rules of cognitive force the standard way of doing things, namely the promotion of felicitous communication. In my discussion of communication I concluded that a truth condition of 'S (the speaker) communicates with A (the audience) by uttering U (a linguistic utterance)' was, '(3) A's interpretation of U must revela S's i_1 to him, "(i_1: S's intent to perform a particular speech act, with respect to A, by uttering U). I also noted that this condition comes close to saying that the conventions under which A and S appraise U's speech act appropriateness in the context of utterance be the same ones. It doesn't quite say this as there is a possibility that S grasps A's intent only by performing a syntactic transformation on U, which becomes U^1, a logically equivalent assertion structured according to different conventions of informative significance and cognitive force. In this case A might appraise U's meaning directly whereas S could only appraise U syntactically, getting its meaning through his understanding of the translation U^1. However, this is a technicality which should not be allowed to obscure the central point which is that two people, each of whom is ignorant of a significant proportion of the rules of informative significance and cognitive force with which the other is according in his use of language, are unlikely to communicate with each other very successfully. In an extreme case this situation would be like a conversation between initiates of completely different cultures and languages. In less extreme cases we get more subtle misunderstandings, misinterpretations so obscure that we believe them to be accurate, which lead to serious misunderstandings which are not easily corrected.

The need for precise communication carries with it the need for standardisation of mode of symbolisation. Mathematicians, chemists and physicists know this well, they spend a great deal of time on standardising the form of algebraic expressions, chemical equation, units etc., and as international communications have become assential to commerce the languages of business have become standardised (usually French and English for historical reasons). Standard English is in many ways a formal entity constructed by grammarians, but the English of most books (especially text books), the English that examiners espect answers written in and the Engilsh that most employers expect their employees to speak, is of a near-standard type, which is unsurprising as the grammars were derives by describing 'good examples' of these sorts of English in the first place. Whatever the historical rights and wrongs of the coming to ascendency of what we now call standard English, that ascendency is a fact. It is logically possible to conceive of a world in which B.E.V., was the English dialect that gained ascendency as the language of business and academia but it is a contingent fact about the world we inhabit that standard English holds sway over other dialects. So the need for standardisation in language use in order to facilitate communication and the fact that one form of English is already predominant in literature, academia and commerce means that we must at least attempt to teach pupils how to function effectively as users of the standard form.

I would, however, express one reservation here. I began this discussion of nonstandard dialects by quoting a verse from A.B. Spellman. Despite its being written in B.E.V. I suspect that few standard English speakers would have any difficulty in grasping the informative significance of this poem (though a grasp of the cognitive force might be more difficult and the deeper poetic meaning, the connotations, the feelings expressed, might be more elusive). Mutual understanding is possible between speakers of different dialects and this fact,

that we can understand a dialect of our language which we cannot speak, moves me to suggest that we are justified in asking for utterances of a standard form only in cases where we require a degree of precision in communication which can only be achieved if all participants in a discussion use (syntactically speaking) the same mode of language. Only when we cannot trust our ability to translate unfamiliar sentence structures, only when we need precision in communication can we justifiably expect others to go to the effort of expressing themselves in an unfamiliar mode of language. 'Correcting' a perfectly understood, and generally understandable, nonstandard utterance is nothing more than pedantic nit-picking.

Finally on this subject I must suggest that although we must teach standard English, in order to help pupils read texts, pass exams or gain employment in a world where rationally untenable beliefs are nevertheless often held irrationally, we must do so with the attitude of teaching a socially useful skill, not with the attitude of correcting mistakes. It is clear that starting from a position of, "You speak bad English, are impolite (etc.), I'm going to teach you good English, good manners (etc.)," would be likely to alienate a pupil who is speaking perfectly correct non-standard English or who is being perfectly polite in the way accepted in his home culture. So there is good reason for saying something more akin to, "In the sort of English books are written in, examiners expect answers written in and employers like to hear people speak we organise things differently from the way you do, so it would be useful if you tried to learn how to say things in the standard way." This would still constitute an imposition on the non-standard English speaker, but at least we would be regarding him as someone possessing sophisticated cognitive and linguistic skills and would not run the risk of alienating him by treating him like a semi-imbecile whose language is little more than expressive gibberish.

Teaching is not an easy task and is unlikely to become one. I hope that my remarks in this section have made explicit some of the problems that can frustrate attempts to teach. In particular I hope that I have emphasised two crucial points. The first is that in teaching we must acknowledge our pupils as subjects of experience with complex inner lives, both cognitive and affective. If we fail to do this we court disaster as pupils do respond to teachers and school affectively and a failure to take this fact into account may well lead to pupils becoming alienated from a teacher, his subject and even school, thus failing to learn anything. The second important point concerns pupils use of language. All cultures expect children to be polite, but the conventions about what sort of utterances constitute politeness, and the conventions governing cognitive force in general, are cultural variables. So teachers, especially teachers in multi-cultural schools, must be careful about reading pupils' utterances as if those pupils were speaking in accordance with the rules governing the cognitive force of standard English. Often this is not the case and a failure to realise it can lead to resentment between teacher and pupil which is based on nothing more than misunderstanding. Teachers must address their pupils' intentions, not the 'surface forms' of utterances.

Finally, 'good grammar' is a problematic notion. There is no justification for regarding the particular syntactic rules of standard English as having any special appropriateness in terms of facilitating logical thought and abstraction -Labov's work makes this clear. Thus it is wrong to disvalue the nonstandard dialects and to assume that those who speak them are cognitively disadvantaged. Non-standard speakers are primarily disadvantaged by the social fact that standard English is the language of teachers, books and (with added vocabulary) of many of the systematic disciplines. They are also disadvantaged by the fact that before

they can achieve academic success they must learn not only to understand the standard form, they must also learn to express themselves in standard form. There seems little way out of this problem except to teach non-standard speakers standard English, but as this is a social requirement and is not justifiable on the grounds that the standard form has any inherent superiority we should not approach teaching it in terms of correcting bad grammar and teaching to think. We must teach the standard form as a new and different mode of language without the unjustifiable assumption that it is in any objective way a superior form.

Conclusion.

I began my thesis by stating three basic problems which I have since offered solutions to. I have rejected behaviourist/physicalist accounts of learning and the associated model of people as responding organisms/ conditionable physiological mechanisms, arguing that to adopt such an approach involves wilfilly ignoring the problems of consciousness and agency. For physics to do this is (as my discussion of the domain of the inanimate suggests) unobjectionable, but in other areas (especially the domain of the personal) a failure to acknowledge people's consciousness and agency constitutes a failure to engage fully with important problems. In teaching we are attempting to increase persons' understanding of, and hence ability to handle, the world in which they live. To fail to acknowledge this is, for reasons I discussed in my section 'On Teaching', likely to frustrate our attempts to teach.

In characterising the utterances (vocal and written) which we commonly use in teaching I have represented them as symbolic representations which derive their 'communicative - act appropriateness' through inter-subjective agreement within a form of life. The central problem with initiation into language, I have argued, is not about how we learn a corpus of grammatical rules, but about how we learn to do things with words. This carries on to the problem of what is involved in initiating pupils into the specialist language games of the systematic disciplines where mastery of concepts, procedures etc. must, for adequate understanding, be augmented by an understanding of what those language games/ways of looking are appropriate for doing and why we should want to solve the sorts of problems that specialist enquiry engages with.

I have characterised understanding in terms of the possession of a conceptual framework which captures to some degree the nature of what is understood.

I have argued that justification of the claim that 'this' paradigm/model/theory complex gives us a reasonable understanding of 'those' phenomena must involve reference to the complex's problem solving power, its practical utility in enabling us to handle relevant aspects of the world, though the theory/practice link may be indirect. This is not to write usefulness into the concept of understanding, it is simply to note that in the absence of clear implications for practice we have no way of establishing any body of theory as revealing its authors' understanding as opposed to their capacity for spinning elaborate phantasies. I have also noted that efficient handling of certain areas of problems by some individual can properly be taken as evidence of understanding even in the absence of an ability to state that understanding explicitly.

From my account of understanding I have derived a number of general problem domains, the inanimate, animate, interpersonal, personal and absolutist which, I believe, constitute a basic template for the curriculum of any institution concerned with giving people a basic general education. I have not derived these 'forms' transcendentally, nor have I fallen into the relativistic error of creating an unbridgable gap between the world and what we say about it. I have attempted to steer a middle course between absolutism and relativism which avoids the problems which frustrate those endeavours.

Finally I have related my findings to the specific problems of curriculum design and teaching.

I cannot deny that much of what I have argued will be objected to by philosophers of many persuasions. I have tried to argue against as many possible objections as I have been able to think of, but there are undoubtedly others I didn't foresee and some of these may have uncomfortable (for me) force. My hope is not

that all I have said is right - to even hope that when every philosopher since Plato has made mistakes would constitute an absurd conceit on my part. What I hope is that my work here is non-trivial, that any serious errors I have made are not of a sort that a competent philosopher should have avoided, that digging out my mistakes will prove a fruitful exercise for others. I also harbour the hope that here and there critical readers will find some insights on the problems discussed that will prove illuminating to some degree even if my handling of the discussion has faults. In short my hope is that this thesis constitutes a worthwhile contribution to the historically continuous and evolving discussion of the problems of education and particularly to the philosophical element in that enterprise.

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